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ABSTRACT

Program Methods and Materials for Training Career Educators (Project FOCUS) established and accomplished three major objectives: (1) to identify, select, and provide inservice career awareness staff development training for elementary school teachers; (2) to design, develop, and evaluate a replicable, exportable, and practical staff development Training Manual (CE 022 608); and (3) to research the effectiveness of the career awareness Training Manual and to validate the efficiency of matching teacher variables to training procedures. The results of the program provided replicable, exportable training programs and recommendations for their use according to the receptivity of the group to be trained. Although these materials were developed for the K-8 level, minor modifications of the content would make them applicable for all other levels. The nature of the programs and the research related to the matching of learning strategies to types of individuals remained constant. The design of the evaluation model sought to combine the essential elements of formative and summative evaluation with formal education research. (This document presents a detailed report of the evaluative procedures employed and an analysis of the results of these procedures. See CE 022 607 for a general description of the developmental and organizational activities of the project.) (BM)

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PROJECT FOCUS

Methods and Materials for Training Career Educators

FINAL REPORT

VOLUME III

THEORY AND RESEARCH: EVALUATION RESULTS

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NATIONAL INSTITUTE OF EDUCATION

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Many funded projects, when reviewed in retrospect, appear significantly different from their initial proposal or statement of intent. This is typically a function of the environmental constraints surrounding funded projects, and the realities encountered in their implementation.

Project FOCUS is one of those relatively rare projects that was implemented as initially planned and proposed. Furthermore, the research results support its hypotheses, and provide solid evidence of success.

Success does not occur by chance. Indeed, many individuals must support and nurture an effort for it to achieve its goals. The staff of Project FOCUS wishes to take the opportunity of this brief section to acknowledge those individuals whose contributions have significantly impacted on the success of this program.

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CHAPTER I

PROJECT FOCUS: AN OVERVIEW

A. Introduction: Mission of the Project

The responsibility for the successful infusion of career education concepts into the school curriculum will rest ultimately with the classroom teacher. As managers of the learning environment in the classroom, teachers are the key figures in the implementation of career education.

Curriculum change is dependent largely on responsive developments in the attitudes, knowledge, skills, and actions of teachers. The training and retraining of teachers, therefore, is of central importance to career education.

The most viable alternative for the training and retraining of personnel for career education is through transportable training models and programs that may be used by teacher trainers, school administrators, career educators, and others within a university setting, a local school system, or state department of education. The concept of infusion within all curriculum areas at all levels, and the existing financial constraints of public education, demand that this training and retraining occur with minimal cost. This requires the development of training models that may readily, easily, and inexpensively be adapted, adopted, and used within a variety of settings. In addition, such training programs must be flexible in their delivery, while still representing the common and universal core competencies required for the delivery of career education programs. This flexibility must accommodate the unique institutional needs of various school systems as well as the differing styles and levels of receptivity on the part of the teachers at each level.

The needs, therefore, are threefold. First, actual training must be provided for school personnel. Secondly, transportable, replicable, and validated training models and materials must be developed that may be used in a variety of settings and within a broad range of constraints. Thirdly, trainers must be able to match the most appropriate training model for varied groups of school personnel.

This project addresses these three needs. A total of eighty teachers from four separate school systems were trained in career education. From this training program, two exportable training models and manuals were produced and disseminated for use by other school systems. Finally, basic research was conducted as an integral part of the evaluation component of this proposal to provide answers to the question of which type of training program is best for which type of teacher.

To assure consistency in the delivery of career education training programs, the research in competency-based teacher education as applied to career education was considered. Work by Odbert formed much of the framework for this initial review. (Odbert, 1974.) The final competencies to be used, however, were those developed by Resnick as part

of a project funded by the Massachusetts State Department of Education. (Resnick, 1977.) This study identified and validated the competencies needed by school personnel to implement career education within six domains of learning. Within each domain, the competencies were provided for elementary, junior, and senior high school teachers; for counselors, coordinators, and administrators.

The actual selection of teachers, and the training program developed within this project are at the K-8 level. This decision was made for two reasons. First, this is the level in which infusion has its greatest and strongest thrust, and consequently seemed the most appropriate place for the assessment of infusion-oriented training programs. Secondly, although the competencies differ somewhat from level to level and group to group among educators, the common core skills of these six domains and the thrusts within them are relatively constant. It was determined, therefore, that the control of the level of teachers would be the best approach, since the other variables of geographic location, teacher receptivity, and structure of the training program are all being modified as variables in this project.

The results of the program provided replicable, exportable training programs and recommendations for their use according to the receptivity of the group to be trained. Although these materials have been developed for the K-8 level, minor modifications of the content would make them applicable for all other levels. The nature of the programs and the research related to the matching of learning strategies to types of individuals remain constant.

B. The Operational Plan

The activities in this project may briefly be grouped into three major headings: pre-operational, operational, and evaluation/dissemination. The following pages describe these categories.

Pre-Operational Phase

This stage of the project began on August 1, 1978, and continued through the end of October. It included all activities that were conducted prior to the first formal meeting of the first training program. The major subcategories of this stage are as follows:

1. Program announcement and recruitment: Four school systems were selected and agreed to participate in the project. This pre-operational phase included the design, development, and printing of a brochure which was distributed to all eligible teachers, along with an appropriate application form. The brochure was available when the teachers returned to school after Labor Day, and applications were received through the end of September. Several meetings were held within each of the participating school systems to provide further information, and all applications received through September 30, 1978, were considered.

2. Participant Screening and Selection: A screening committee was established during the first week of August. Through September, individuals submitted their applications. The candidates were then notified of their acceptance in the program by the first week in October.

3. Participant Pretesting: The accepted participants were pre tested regarding their attitude toward and knowledge of career education. This served as the base-line data to measure the effectiveness of the training program. Pretesting was completed by October 30, 1978.

4. Participant Grouping: Measures of "receptivity to change" were administered and scored for each participant. The scores were ranked for each school system, and a median point was used to establish the teachers from each school system as being in the low or high receptive category. From this initial grouping, a second stage grouping was conducted in which each person was randomly assigned to a low or high structure group, so that each cell in the training design would meet the research criteria specified.

5. Training Program Development: The development of the curriculum and strategies for the training programs were initiated during the first week of September. During this month, the competencies that form the core of the project were carefully reviewed, divided into their subcomponents, and sequenced. From this sequencing, specific behavioral objectives were established for each training session. By the end of September, therefore, the entire scope and sequence of the behavioral objectives for the program were established. At this point, the development of the strategies and instructional materials were initiated. This step occurred, starting in the beginning of October, so that the curriculum developers could stay six to eight weeks ahead of the training program in the design and development of materials. Material development, review, refinement, and revision were conducted continuously through the end of the training component of the project in June, 1979.

6. Curriculum Material Acquisition: A career education curriculum laboratory has been established at Boston University, as part of the institution's commitment to career education. The resources of this project, however, expanded the scope of materials in this curriculum center so that the participants could work with the broadest range of materials available. Materials were ordered starting in the middle of September, and received, catalogued, and used throughout the project. New materials were ordered on a continuous basis as well. After the project is over these materials will be retained in this curriculum center and made available to the project participants, as well as to others studying in the field of career education.

Operational Phase

This stage of the project began in January, 1979, and continued through the end of the Spring 1979 semester in early May. It defined the parameters of the training project itself, during which all participants were actively engaged in this process. The major subcategories of this stage are as follows.

1. The Training Program: The participants were grouped into four classes of twenty students each. Each group enrolled in a formal class for the Spring semester, for which a total of 4 semester hours of graduate credit were awarded. As described in the exemplary nature section of this project, each group was specifically designated, both in the selection and treatment process. The trainers met with their groups, but did not know which group they were conducting. All materials needed for sessions were developed by the curriculum developers and given to the trainers several weeks in advance of their use. Opportunities to discuss these materials, both before and after their use, were provided at the trainer's meetings. This concluded the formal training program. During this second semester, teachers were asked to experiment with the implementation of their training sessions in their classrooms. To help with this process, a field site coordinator was designated for each school system, to help with the coordination and support that was needed for this implementation. Student evaluations were not conducted, however, since the training program was designed to measure skills acquired by the teachers, and not the subsequent achievement on the part of their students.

2. Training Manual Development: The materials for the training manuals were developed on a continuous basis, starting in September. Essentially, the training manuals contained all the behavioral objectives and strategies developed, used, field tested, and revised during the training program. Careful records of all successes, failures, and modifications were maintained. Thus, at the end of the operational phase of the project, the pre-assessment components of the training manuals and much of the curriculum guide materials had been completed.

3. Formative Evaluation: Ongoing and continuous evaluaions were conducted throughout this operational phase. This is described in greater detail in the evaluation section of this study. Essentially, student involvement and satisfaction, teachers' reactions, and implementation were measured periodically, using instruments prepared by the evaluation team. This provided feedback that was essential to the research component of the program. In addition, however, this formative assessment provided feedback regarding the general success of the training project.

Evaluation/Dissemination Phase

This was the final stage of the project and was conducted starting in the beginning of May, 1979, and continues through the end of August, 1979. The two major goals of this phase were to conduct the summative evaluation of the project, and complete and disseminate the training manuals so they could be used by other school systems, universities, and state departments of education. Following are the subcategories of this stage.

1. Summative Evaluation: This evaluation was designed to answer a number of questions. The first of these questions is related to the achievement of the individuals and groups. Once the pre and posttest attitudinal and cognitive change scores were established, tests for significance were made to determine whether the training program was indeed successful. These change scores then formed the base for the analysis of receptivity scales, other variables, and the training delivery programs (high- or low-structure) so that predictive validity could be established regarding the "best fit" of the type of training program for individuals with differing characteristics and receptivity scores. All data needed for this analysis was collected by the end of the first week in May, since much of it was gathered in the formative process throughout the operational phase of the project. The data was keypunched and made ready for analysis in May. The analysis and computer utilization were conducted during the month of June, 1979. The results were interpreted in July, and the final report of the assessment phase was written in August, so that it could be final typed, duplicated and disseminated by the end of the project. This final evaluation report provides a description of the population and the formation of treatment groups, information regarding the effectiveness of the training program itself, and the results of formative evaluation data. It also includes pre and posttest instruments with directions for scoring, so that this part of the training program could be used by others as well.

C. The Model of Instruction

The model of instruction is exemplary in that it attempts to address the differentiated needs of teachers and their individual learning styles as they relate to career education competencies. More specifically, the project addresses itself to two main questions:

1. When are teachers different enough in their learning styles so that different patterns of instruction are necessary to promote effective career education programs?

2. How can a "best fit" between the learning styles of teachers and patterns of instruction be made practical so that career education training can occur most effectively?

In attempting to address these two questions, a model has been developed for discussing individual teacher differences as they relate to differentiated patterns of instruction. While the task of presenting a model of differentiated instruction is not difficult because there exists sufficient research to guide instructional planning, rarely is this type of technology applied to teacher education. More often teachers are treated as a monolithic group who merely require a "good" program of instruction. However, in planning this program of instruction we have accepted the reality that teachers are different in their styles and that they require appropriate conditions for learning.

The model presented here has been advanced by many other authors (e.g., Cronback, 1957, 1967; Gagne, 1967; Jensen, 1967, 1968; Hunt, 1966a; Thelen, 1967, etc.). In its simplest form it states that an individual's responses are the results of the interaction between the environment and the predispositional state of the organism. Translated into an educational context, the model indicates that dispositional states such as cognitive styles, stages of development, etc., enter into complex interaction with different types of environment inputs to produce a wide variety of behaviors. This model has led to a variety of educational statements centering around the tailoring of specific types of teaching environments to deal with individual differences in the predispositional states of learners. Several examples are given here to see the practical educational import of the model.

1. High-anxious students function better under a structured teaching situation, whereas low-anxious students function better in unstructured situations.

2. Compulsive learners do better in high structured teaching situations, while less compulsive learners respond to low structured teaching situations.

3. Learners with low conceptual ability function better under a controlling teacher style, whereas learners of high conceptual ability function better under a reflective teaching style.

These examples are not unfamiliar, since they are a reflection of the current paradigm which attempts to deal with individual differences in educational settings. However, the complexity of the model becomes more apparent when we try to deal with one of these variables, i.e., learner variables, environmental variables, behavioral outcomes, and the nature of their interactive processes. In order to analyze fully the importance of these factors for teaching education and inservice career education training, we now turn to the role of receptive and unreceptive attitudes of teachers as a personality variable in the planning and delivery of teacher training models.

The importance of the teacher's attitude toward career education in the elementary school would appear to be an obvious initial consideration for any inservice education activity. It can be oversimplified by recognizing the need for a positive or receptive attitude on the part of teachers. Thus, the teacher with a positive attitude will most likely succeed in any program, while teachers with negative attitudes are

unlikely to succeed in any program. When viewed from the interactive instructional model, this need not be the case at all.

The interactive instructional model reveals that the teacher with a receptive attitude may function effectively in several patterns of instruction, i.e., high structured or teacher guided; moderately structured with a balance between teacher guided and self-initiated activity; or student-centered utilization of resource materials and personnel. However, to optimize the receptive attitude of the teacher, it might be more useful to make all these options available to the receptive teacher. The less receptive teacher is not necessarily a lost cause. Indeed, from our point of view he/she cannot be ignored and quite possibly should be the focus of the inservice career education program. The notion of instructional options raises the possibility of finding an instructional match for less receptive teachers that will make them more receptive, increase their knowledge and skills, and create the climate for fostering career education in their classrooms.

Given any group of teachers, whether they are from rural, suburban, or urban communities, there will be a distribution along a continuum from receptive attitudes toward career education to less receptive attitudes. These differences among teacher personalities mean that resources need to be provisioned in such a way that differentiated patterns of instruction can be planned and utilized to optimize the inservice education program. The concept of modulating the degree of imposed structure on the learner offers an approach to flexible program activity. For those teachers who are least receptive to career education in their classrooms, a more structured approach to inservice education might be approprpriate. As teachers increase in their receptivity, less structured approaches would offer them the opportunity to participate in the selection and organization of programmatic activity, and to serve as leaders in the development of career education materials for school children. In this way it is possible to match programmatic instruction to the differentiated needs of teachers.

The concept of differentiated learners matched to different educational environments provides the opportunity to establish a theory of instruction which enhances the achievement of better instruction in classrooms. The teacher benefits from this theory by directing an educational approach toward his or her student to produce a desired effect. Viewing what happens in the classroom this way emphasizes the need for a teacher's having workable conceptions of environments, persons, and behaviors. Thus, in providing inservice career education training programs we must consider how different patterns of instruction which vary, for example, in student (teacher) responsibility, produce different effects. Our goal is to utilize the notion of an optimal match or mismatch.

The basic research on matching educational environment and persons to achieve more effective educational outcomes was conducted by D. E. Hunt (1971) of the Ontario Institute for Studies in Education. Hunt's

Conceptual Level model describes how growth is determined both by the person's stage of development and by the environment he experiences. It is helpful to think of persons and environments as being matched or mismatched, either for contemporaneous or developmental growth. The basic concept states that when there is a match there is progress, and when they are mismatched the combination results in arrestation or no progress. In developmental growth, the ideal combination is an optimal mismatch which challenges the learner to higher developmental stages. However, the goal of instruction is to create conditions which support growth regardless of the learner's present stage of achievement.

The purpose of creating a model of instruction for inservice teacher education is to increase the effectiveness of the program. Teachers, like any learners, have different personalities, and, according to our theoretical framework, if they are to succeed in learning about and infusing career education in their classroom instruction, they will need differentiated educational experiences during their own training program. We propose that teachers be assessed upon admission to the program on their receptivity to career education and that during their participation in the program differentiated experiences be provided to determine the best programmatic delivery to match each attitudinal orientation.

Teachers who are admitted to the inservice education program are screened to determine their orientation to career education, and classified as high or low receptive learners. Since the program is designed for rural, upper and lower middle class suburban and urban teachers, each of these four groups was divided into two groups: high and low receptivity. This grouping procedure provided the basis for the pattern of instruction.

The program, therefore, was designed to accomplish several major objectives. The first of these is to provide actual career education inservice training for the program participants. This was institutionally recognized as 4 semester hours of graduate credit for each teacher. The second major objective was to develop and validate training programs (manuals) that could be used by other institutions of higher education, and school systems. One of these models was a "high-structure" model. The other was oriented for "low-structure" groups.

The third major objective of the program was to determine which of these models (high or low-structure) should be used with teachers with high or low receptivity characteristics. Although a great deal of research has been conducted in the area of matching learner characteristics to learning environments, there does not exist in this literature a clear response to the question of matching characteristics of receptivity to environments of high and low structure. Consequently, the 80 teachers to be trained were first divided into two groups per school system: high and low receptivity. This adjudication was made from the screening instruments applied and data gathered. Four training classes were then established. Each class contained five individuals from each school system, for a total of twenty students per group. Two of these

groups contained the high receptivity teachers; the other two groups were comprised of the low receptivity individuals. These groups were further subdivided into high and low-structure groups, as shown in the figure below. The resultant groups formed the four possible relationships of receptivity and structure.

A -- high receptivity - high-structure
B -- high receptivity - low-structure
C -- low receptivity - high-structure
D -- low receptivity - low-structure

Within these groups, appropriate instructional strategies and materials were used. Each group pursued identical objectives. The delivery varied, however, based upon the structure designed for each group. The results in both attitude and achievement by the participants in each group served as predictive variables for other school systems in the process of matching training programs with teacher characteristics. Thus, the proposed project provided basic research for career education, as well as training materials and strategies. The evaluation section of this study includes the entire research design and hypotheses that will be addressed in this component of the project.

The modulation of the degree of imposed structure according to teacher's receptivity to career education provides an experimental thrust into inservice teacher education. It recognizes not only the need for career education content, but the need for a program of instruction which takes into account the "needs of the learner." In a real sense we are attempting to practice what we preach, as a model for these teachers to use with their students as they infuse career education into the elementary school curriculum. If we are successful in our efforts, then they are more likely to be successful as well. This career education model will provide the basis for the program's experimental design.

D. The Evaluation Model

The design of the evaluation model sought to combine the essential elements of formative and summative evaluation with formal educational research. This unique design included provisions for delineating the population along sociological and personal dimensions, for accommodating these dimensions during instruction in career education, and for conducting research on the effectiveness of patterns of instruction and the use of the training manuals. The synthesis of these programmatic features represents a unified evaluation model that can be readily adapted to other career education programs and transported to other sites along with the present instructional model.

The evaluation model includes three objectives along with the evaluation design, data collection instruments, data analysis schema, and provisions for incorporating the evaluative findings into the development of the ongoing training program. This monitoring process is developed through three phases of evaluation: Pre-Operational, Formative, and Summative. The Pre-Operational phase identifies the inputs into the instructional program and provides guidance for the trainers who are

responsible for regulating the groupings and organization of the curriculum and instructional program. The inputs include Demographic Data, Professional Background of Teachers, School-Based Activities, and Receptivity to Change. In addition, a pretest on career awareness knowledge was used to measure participants' content and process competencies. This basic information on the participants allowed for the design of the groupings of teachers and the preparation of the instructional procedures and materials.

Phase two, the Formative Phase, moved from the first objective of the evaluation model to the second objective which related the research to evaluation activity. Here we were concerned with matching teacher variables and instructional variables with the goal of increasing the effectiveness of the ongoing instructional program. The guiding concept is that the better the match between the individual and the instructional activity, the more likely the individual will be successful and motivated toward career education. It was hypothesized that there was a pattern of interaction between curriculum structures, receptivity to change, and change in career awareness knowledge scores. A second series of hypotheses relates to the interaction between curriculum structure, receptivity to change, demographic backgrounds, professional background and school settings, and cognitive skill scores. There is a third set of relationships which relate these variables with changes in attitudes toward career awareness. Through the use of regression procedures this data permitted the prediction of programmatic outcomes and the quantification of their relative importance. While the actual research was extended to phase three which finalizes the research efforts, much of the ongoing activity of the program of instruction reflects the continuous input of new data and modifications of the program of instruction. The goal of this phase of the evaluation - research activity was to enhance the delivery of instructional services and to maximize the involvement of the participants.

In the Summative Phase of the evaluation model presage, process, and product variables were synthesized and a comprehensive interpretation emerged which allowed for the evaluation of the program success in empirical terms and the modification of the training manuals. All three programmatic objectives were examined to determine the extent to which they have been realized. Demographic and background variables, personality measures, and pre-test knowledge scores were considered along with criterion test scores, change scores, and interactions from research studies. From this rather comprehensive perspective the project was evaluated for the final report and refinement of the training manuals.

The evaluation model of this project has exemplary features which reflect a strong research orientation and yet remains basically simple and practical. There is little here to frighten the teacher educator, participants, or administrators. It has the virtue of immediate application for the improvement of instruction. Finally, the model is grounded in a human concern for individual differences and supports the pluralism which exists in the teaching profession.

E. Conclusions

Each of the preceding components of this project develops an aspect of the Career Education Training Program. As separate entities they represent an important contribution to career education training for teachers. As a unified and cohesive structure these components are presented as a prototype model of career education staff development. It is viewed as a programmatic thrust into teacher education that adds depth and rigor into the training of teachers. Both in its substance and pedagogy, there are provisions for dealing with teacher competencies, training procedures, evaluation, and career education research. For those who might emulate or adapt this instructional model, there is a detailed educational procedure and product.

CHAPTER II

PROJECT FOCUS: A SYNTHESIS

In its simplest form Project FOCUS began as an inquiry into inservice career education for teachers. Our goal was to better understand the realtionship between teacher learning characteristics, instructional approaches, and behavioral outcomes. The theory, too, was relatively simple: effective career education for teachers includes both cognitive and affective outcomes, and the ways to achieve those outcomes is to coordinate personality variables with environmental variables. The matching of these two types of variables results in higher scores. In the following sections of this synthesis we report the major conclusions and findings of the study.

A. Conclusions

1. The Project proved to be an effective vehicle for increasing educators' knowledge of and attitudes toward infusing career education into the school curriculum. Significant differences were found in both of these domains as a result of participating in the training program.

2. The Project provided evidence that the training program is a functional tool for staff development. That is, it can be used by instructors to effect the cognitive and affective changes described in the previous conclusion.

3. The Project is suitable for use as a staff development program. That is, the four instructors in the pilot test used approximately 85% of the program, which both maintained program integrity and allowed for individual and situational differences among the instructors and the individual needs of participants.

4. Educators enjoyed participating in the program. That is, the research provides evidence that they were both involved in the instructional process, and satisfied with that process during implementation. Formative evaluation data revealed that the participants engaged the instructional content and worked diligently toward achieving the objectives of the program.

5. The staff development training manual included two instructional styles: high- and low-structure. Both the high- and low-structure treatments were effective tools for achieving the cognitive and affective outcomes of the Project. That is, an instructor could use either treatment with a level of confidence that it would work with the program participants.

6. Teacher (program participants) can be divided into separate groups based on their receptivity toward change and innovation. This is an effective decision-making criterion for assigning treatment (high- and low-structure) to groups of participants.

7. It is better to match high receptive participants with a low-structure program and vice versa. When program participants are matched (high or low receptive) to training treatments (high- or low-structure) their variability of involvement and satisfaction will decrease and they will tend to score higher on involvement and satisfaction scales.

8. When teacher receptivity and training treatments are matched (low receptive to high-structure and vice versa) participants show greater increases in their attitudes toward career education.

9. Project FOCUS is an effective program for training individuals for the implementation of career education. The program provides alternative training approaches that can be matched to both the orientation of the instructor and the learning styles of participants.

The details of this inquiry provide useful insights into the complexities of these conclusions. For example, there are the difficulties associated with the cognitive measures. The items on the test were developed from the content and behavioral objectives of the program, a table of specifications provided support for this mapping process. However, an item analysis revealed low reliability, limiting the value of the test for research purposes. The results of the research might well have been distorted by this aspect of the outcome measure. In the following sections, we examine the findings in detail in an attempt to explicate the conclusions further. The significance and limitations are considered briefly at the conclusion of this section.

B. Receptivity

This research was based upon the assumption that teachers vary in their learning styles, and therefore require different patterns of instruction. It further assumed that the different instructional programs interact with the learning characteristics of teachers to produce differentiated effects from the inservice career education program. The following findings relate to these assumptions:

1. Hunt's interactive theory of instruction was presented as the model for developing specific aspects of the program. The concept of receptivity as a learning characteristic was derived from the theory of conceptual level. Receptivity includes orientations to dogmatism, social rigidity, motivation, innovation, and teaching structure.

2. Each of these orientations were examined to determine the extent to which the population of this study was representative of a normal distribution, and the reliability of the measures. The five scales discriminated differences among the teachers' characteristics in each of the five areas, and each was found reliable for purposes of this research.

3. Using factor analysis, the interrelationships and "goodness of fit" were examined to determine the cohesion of these measures. Dogmatism and rigidity scales clustered together to form the cognitive measure; innovation and teaching structure clustered to form the value measure; and motivation emerged as a separate factor. These measures, with the exception of motivation, had acceptable reliability coefficients for research purposes. Theconcept of receptivity was operationalized by the development of these scales into a cohesive measure.

4. Receptivity, with regard to the population under study, was examined in terms of the variability of its demographic characteristics. The researchers were concerned with the extent to which the sample was representative of a variety of teachers in age, sex, marital status, etc. With exception of sex (there were more females than males in the study), it was felt that the sample was representative of teachers, and that the results of the study could be generalized to them.

5. The measures of receptivity were used to classify teachers as high and low receptive learners. After assigning z scores to each trainee, and a formula to compute the total receptivity score, the trainees were ranked and a median split was used to form high and low receptive groups. The groups were found to be equally split among school systems, and that high and low receptive individuals were equally distributed.

6. Once trainees were classified into groups, they were examined to determine the demographic correlates of receptivity. Correlations were found for age, income, teaching experience, professional reading and membership organizations, and sex. The findings for sex were significant and deserve further study.

7. Having empirically defined receptivity and applied these measures to the formation of training groups, the program of instruction was described in terms of matched and mismatched individuals in eight treatment groups. A non-significant chi-square statistic demonstrated that receptive persons were randomly assigned to treatment groups.

This detailed analysis of receptivity provided a rather insightful understanding of the population of this study, and it gave us confidence that the sample was representative of teachers who are likely to experience the training program of the manual. The concept of receptivity appears to be a useful tool for differentiating teachers for the purpose of instruction. The more receptive students who experienced the low-structure treatment, and the low receptive students who received the high-structure treatments were expected to achieve higher on the cognitive and affective measures used to assess the effectiveness of the instructional program.

C. Effectiveness

The effectiveness of the program was measured by a teacher-made cognitive test which was developed in accordance to the content and goals of the training program, and a standardized affective measure of attitudes toward career education. The following findings from the study evidence the success of the training program. They produce a complex picture which we see as truly representing the type of success the manual and actual training program are likely to achieve at another time in the schools.

1. The cognitive instrument was analyzed through an item analysis and the development of a table of specifications. The test was identified as an adequate teacher-made test which mapped course objectives to test items. The low reliability limited the value of the test for research purposes, however, we used the test in the study because we felt it was the best measure of the substance in the training program.

2. The affective instrument, the Career Education Information Inventory, was selected because of its content validity, internal consistency, and retest reliability. The results of the pretest indicated a fairly normal distribution of score. Further analysis reveal no systematic difference between school systems, curriculum structure, or sex. These results provide the statistical basis for a thorough interpretation of post-test scores.

3. To determine if a difference existed in the pre- and post-tests, t-tests were performed on the cognitive and affective mean gain scores. Highly significant gain scores were found for both the cognitive and affective measures. Therefore, the researchers concluded with confidence that the overall effects were positive for the training program.

4. The researchers addressed the question of whether there were differences in cognitive and affective gain scores between high and low-structure sessions. The results of the t-test showed that there were no significant differences in these two treatment groups.

5. The researchers also addressed the question of differences in gain sscores for high and low receptive learners. No significant gain scores were found in cognitive and affective measures for high and low receptive learners. These findings indicate that the significant gain scores were not reflective of structure or receptivity.

6. The interaction between matched and mismatched students took a different direction for the cognitive and affective measures. Matched students showed greater gains in the affective domain than did mismatched students. Students with high

levels of receptivity showed greater attitudinal gains in low-structure sessions than low receptive students. Low receptive students showed greater attitudinal gains in high-structure sessions than did their classmates with high receptivity.

7. The results of the cognitive pre- and post-tests were complex and somewhat mixed. Low receptive students gained more in low-structure sessions than did their low receptive counterparts in high-structure sessions. It was also true that these low receptive students had the lowest pretest scores, and their gains did not exceed the other group.

8. The interaction between receptivity and structure, and the results of the cognitive gains fell somewhat short of significance ($p = .15$).

9. While mismatched subjects displayed simplar cognitive gains, the same was not true for their matched counterparts, i.e., high receptive subjects in high-structure settings ($\bar{x}$ 1.86), and low receptive in low-structure settings ($\bar{x}$ 4.73); low receptive matched to high-structure ($\bar{x}$ 1.86), and high receptive matched to low-structure ($\bar{x}$ 3.50). These findings failed to substantiate the hypothesized interactive effects in the cognitive domain.

D. Implementation

Overall Results

1. Students appeared to be more involved with the program than they were satisfied with the program.

2. Overall mean scores for both involvement and satisfaction place students in the highest quadrant (quadrant IV).

3. Instructors were generally satisfied with the training program, the instructor's guide, and resources provided in the manual.

4. Teachers' reactions were higher in the beginning of the program than in the final lessons.

5. The overall mean score for implementation was 1.7 or 86% which indicates that the program was adequate for the time provided, and that teachers were able to carry out the instructional tasks.

High- and Low-Structure Treatments

1. Students felt slightly more involved with the high-structure sessions, though there was greater variability in these sessions.

2. Both involvement and satisfaction were in the highest quadrant (quadrant IV) for high- and low-structure sessions.

3. Teachers tended to be somewhat more satisfied with the high-structure sessions.

4. Teachers implemented about 85% of the high- and low-structure treatments.

5. There was a tendency to implement both treatments in the beginning of the program than those near the end.

Location

1. In all locations, teachers tended to have higher involvement than satisfaction, however, there was greater variability in involvement.

2. In all locations both involvement and satisfaction were in the highest quadrant.

3. In all locations teachers appeared to be satisfied with the program.

4. In all locations instructors implemented a high proportion of the program (80%).

Location (High- and Low-Structure)

1. In all locations low-structure environments produced overall mean values for both involvement and satisfaction.

2. The variability of both involvement and satisfaction was less in low-structure treatment sessions in all locations.

3. Instructors in all locations appeared to be more satisfied with the high-structure sessions.

4. In two locations the high-structure sessions had a higher percentage of implementation.

Matched and Mismatched Students

Matched and mismatched data are are available only for student involvement and satisfaction.

1. The overall mean values indicated students were more involved and satisfied in matched groups.

2. Both matched and mismatched groups had mean scores in involvement and satisfaction that placed them in the highest quadrant.

3. Matched groups had less variability for both involvement and satisfaction.

CHAPTER III

RECEPTIVITY: A STUDY OF TEACHERS AS LEARNERS

A. Theoretical Considerations

The purpose of this section of the report is to describe the population of this study in terms of receptivity. Receptivity refers to the psychological processes called upon by treatment variables to induce learning-positive attitudes toward career education, and knowledge of ways to infuse career education into the K-8 school curriculum. Receptivity is viewed as a mediating variable between the learning environment and program outcomes.

The study also addresses the need for a better conceptualization of treatment in career education research. It attempts to bridge the psychological processes (receptivity), and treatment processes (high- and low-structure variables) in terms of the functions which they are designed to serve. It is hoped that this approach will help career educators use more effective inservice staff development.

Rationale for a Differentiated Inservice Instruction

Inservice training programs in career education have assumed teachers to be monolithic in their learning styles, in that they have only looked at attitudes toward the program rather than teachers' cognitive and motivational orientations. They have usually prescribed one "good" model of instruction in designing inservice programs. Inservice educators who have assumed that teachers vary only in their attitudes toward career education, have selected teachers who have positive attitudes towards career education, and have ignored teachers who are less receptive to infusing career education into the curriculum. These educators assumed that highly receptive teachers would master both the cognitive and affective goals of the inservice program, and that the less receptive would perform poorly. We argue, on the contrary, that teachers who are less receptive may fare well in programs that consider individual learning styles and differentiate instruction to accommodate these styles.

Psychologists have long documented that students have individual differences in their learning styles, and require different approaches to learning (e.g., Cronback, 1957, 1967; Gagne, 1967; Jensen, 1967, 1968; Hunt, 1966a; Thelen, 1967, etc.). Federal law 94-142 dictates to educators that they must take into consideration different training styles of handicapped students and must individualize patterns of instruction. Some educators advocate individualized education plans for all students as a matter of right.

The model that we attempted to apply is based upon the conceptualizations of Kurt Lewin, who argued that behavior is a function of both the person and the environment. Translated into an educational context, the model indicates that cognitive learning styles and stages of development enter into complex interaction with different types of environmental inputs to produce a wide variety of behaviors. In educational terms, the

environmental experiences can be the size of school, teacher behavior, and patterns of instruction. These environmental experiences can be matched with learning styles of teachers and can, therefore, meet the cognitive and affective goals of inservice programs.

This model has led to a variety of educational statements concerning matching educational environments to learning styles, for example:

1. Highly anxious students function better under a structured learning situation, whereas less anxious students function better in unstructured situations.

2. Compulsive learners do better in highly structured learning learning situations, whereas less compulsive learners respond to less structured learning situations.

3. Learners with low conceptual ability function better under a controlled teaching style, whereas learners of high conceptual ability function better under a reflective teaching style.

Receptivity is one of the personality variables that would be used in planning and delivering teacher training programs. The interactive instructional model reveals that the teacher with a highly receptive attitude may learn more effectively in several patterns of instruction, i.e., highly structured or teacher guided; moderately structured with a balance between teacher guided and self-initiated activity; or student-centered utilization of resource materials and personnel. To optimize the receptivity of teachers, it may be useful to make all options available. For less receptive subjects, we can structure the educational environment so that they experience a more structured approach. Providing suitable instructional matches may increase all teachers' knowledge and skills, and may make them more likely to foster career education in their classrooms. As teachers increase in their receptivity, less structured approaches will offer them the opportunity to participate in the selection and organization of programmatic activity and to serve as leaders in the development of career education materials for school children.

The concept of matching different learning styles to different educational environments provides the opportunity to enhance classroom instruction. For teachers to participate in these types of training programs will not only give them added skills in career education, but should also give them a working understanding of the conceptions of environments, persons, and behaviors.

Thus, in providing inservice career education training programs, the training agent must address the following questions:

1. What are the learning characteristics of the trainees?

2. What are appropriate educational approaches?

3. How are learning characteristics matched to instructional approaches?

4. What types of interactions take place between learners and instructional approaches to produce differentiated behaviors?

5. What types of interactions between learners and instructional approaches are required to produce desired programmatic behavior changes?

To answer these questions, we have to refer to David Hunt's conceptual level model.

The Theoretical Model: Hunt's Conceptual Level Model

The basic research in matching persons and educational environments to achieve more effective educational outcomes was conducted by David E. Hunt (1971) of the Ontario Institute of Studies in Education. Hunt's conceptual level model describes how growth is determined both by the individual's stage of development, and by his environment. It is helpful to think of individuals and environments as being matched or mismatched, either for contemporaneous or developmental growth. The basic concept states that when there is a match, progress results, and when there is a mismatch, there is no progress. In developmental growth, the ideal combination is a mismatch which challenges the learner to higher developmental stages. However, the goal of instruction is to create conditions which support growth regardless of the learners' present stage of achievement.

Hunt defines stages of development in terms of a conceptual system. The conceptual system is defined as "...a schema that provides the basis by which the individual relates to the environmental events he experiences." (Harvey, Hunt, Schroder, 1961, pp. 244-245.) The system has two important dimensions. The first dimension is concerned with how the person processes information. Variations in stages are described in terms of cognitive variables or information processing, for example, "the degree of differentiation, integrative complexity, level of abstractness." The second dimension is the interpersonal orientation, which is concerned with "how the person conceptualizes himself, others, and the relationship between himself and others." (Hunt, 1971, p. 18.) Variations of stages on this dimension are described in terms of interpersonal maturity "from a form in which both self and others are undifferentiated parts of the generalized standard, to a structure in which the self is part of highly differentiated others, all of which are integrated into a whole" (Hunt, 1971, p. 18). A higher conceptual level person has characteristics which are associated with "lower stereotyping and greater flexibility in the face of complex and changing problem situations, toward greater creativity, exploration behavior, tolerance of stress, etc." (Harvey, Schroder, 1963, p. 134.) Higher conceptual level persons also have "greater self-understanding and empathetic awareness of others." Conversely, people who have low conceptual functioning tend to be egocentric, non-assertive, intolerant of ambiguity, and other points of view, concerned with rules and dependent on authority" (Hunt, 1971, p. 30).

Hunt's conceptual level model is an interactive theory of development which considers that the movement of an individual from low to high conceptual functioning is related to his environment. The basic dimension of environment is the degree of structure. In a highly structured situation, the environment is determined by the teacher, and the student does not have the responsibility to determine instructional events. Highly structured is defined in terms of "teacher-centered approaches, learning through lecture, and presenting the rule or principle before the examples" (Heine, 1971, p. 214) (deductive teaching). In low-structure situations, the individual, along with the training agent, has the responsibility of determining the environment. In instructional terms low-structure approaches are exemplified "by student-centered approaches, discovery learning, and the presentation of examples before the presentation of the principle" (Hunt, 1971, P. 214) (inductive teaching).

Hunt's model coordinates the conceptual levels of persons with degrees of structure in teaching methods. Persons with low conceptual development function better in highly structured approaches, where conformation is presented in clear, consistent ways, whereas persons with high conceptual development will benefit from low-structure approaches or be unaffected by variations in patterns of instruction. Hunt has presented experimental evidence that supports these hypotheses (Hunt and Hart, 1967) (McLachlan and Hunt, 1973) (Tomlinson and Hunt, 1971).

The Model's Relationship to Training of Teachers: Accessibility Characteristics

Hunt's model is useful for training agents and policy makers who formulate and evaluate teacher-training programs. It allows trainers to define learning styles in terms of the conceptual level of the trainees, and the learning environment in terms of the degree of structure in teaching methods. While the model does not specify how to implement the person - environment match, it does specify those characteristics of trainees and the learning environment which constitute a matched or mismatched condition.

Traditionally, trainers have only examined teachers in terms of their skills and/or attitudinal level toward the particular topic of instruction. Teachers who had positive attitudes and/or some previous knowledge of the program were admitted and defined as receptive toward the program objectives. These measures were not used to make differentiated placements, and the measures themselves did not delineate individual differences for purposes of training.

David Hunt has elaborated on his conceptual level model theory for teacher training; he has described trainee aptitudes in terms of accessibility channels which systematically relate to the selection of the most appropriate degrees of structure in the teaching methods. In this project, receptivity to career education has been defined in terms of David Hunt's accessibility channels.

These accessibility channels alow the trainer to "specify the procedure for unfreezing or reaching the trainee," (Hunt, 1971, p. 51) in

the form of suggesting training intervention which will make the trainee more receptive to mastering the objectives of the training program. Hunt has delineated four accessibility characteristics: cognitive orientation, motivational orientation, value orientation, and sensory orientation.

The first of these accessibility characteristics, cognitive orientation, explains how the trainee organizes and interprets his experience in the training program. As previously stated, persons with low conceptual functioning (socially dependent, concrete thinkers) will benefit from high degrees of structure, whereas those of high conceptual levels (independent, abstract thinkers) will benefit from low or moderate degrees of structure. Conceptual level has been used in several investigations of trainee characteristics (Bundy, 1968; Heck, 1968; Hunt, 1970). Hunt has noted that measures of the degree of structure in the learning environment are available (Schroder, Driver, and Streufert, 1967) (Hunt and Hardt, 1967a, and Hunt and Joyce, 1967).

The second accessibility characteristic is motivational orientation, which refers to preferences and reactions to feedback and rewards. A person can be motivated by the need for social approval or be intrinsically motivated. Hunt points out that a person may receive information about his performance in many ways. He can view a video-type of himself, or be told about his performance. The feedback can vary in terms of nature, source, and informational quality. The nature of the feedback can be good or bad; the source can be either authority or peer; the informational quality can be approval ("that's right") or informational ("I like the way you're doing that."). Many studies quoted by Hunt demonstrate differential effects in programs which vary reward and feedback systems. (Schroder and Hunt, 1957; Thompson and Hunnicutt, 1944; Van de Riet, 1964; French, 1958.) For example, Wells (1958) noted that persons who were less independent ("other-directed") worked better under conditions of "experimenter-defined feedback." Persons who were more independent or "inner-directed" worked better when the feedback was self-defined (Hunt, 1971, p. 71). These studies suggest that persons with high social approval needs will perform more effectively in training programs in which rewards are extrinsic and feedback normative, whereas persons with self-directed motivations will prefer intrinsic rewards and self-defined feedback.

The third accessibility channel, value orientation, relates to feelings about the objectives of the training program, and the degree to which the trainee agrees or disagrees with the ideas conveyed by the program. This dimension is important because the trainer can either present a point of view outright or gradually. Perhaps in some cases the presentation can be "value-neutral" or "informational only." Hunt suggests that "When matching value orientation with value content of the presentation, the central hypotheses would be that these learners are more likely to profit from a presentation within the 'latitude of acceptance' of their current value orientation," and "less likely to profit from a presentation either identical to their present stand or outside their 'latitude of acceptance'." (Hunt, 1971, p. 48.) Hunt has reported research that has shown that absolute approaches in presentations were

more effective with non-authoritarian persons (Harvey and Rutherford, 1958). Persons high in other-directedness were more susceptible to an informational approach than to an approach that gave them insight into their attitudes (McClintock, 1958).

The fourth accessibility channel is sensory orientation, which refers to the visual and auditory modality strengths of the trainees. Individuals have shown preferences for visual or auditory presentations. Studies have attempted to relate these modality preferences to personality characteristics (Snow, Tiffen, and Seibert, 1965) (Koran, McDonald and Snow, 1969).

In the next section, Research Design, these accessibility characteristics are represented in five personality measures. They provide the rationale for selecting the actual measures which serve to identify receptivity. The measures themselves are then analyzed to see that they correlate with each other. This procedure allows for the classification of high and low receptive learners.

B. Research Design: Introduction

In this section the theoretical framework of Hunt's accessibility characteristics is translated into a workable, empirical measure of receptivity. Later, the population under study is described in terms of these empirical measures (receptivity) and classified according to appropriate treatment groups.

We begin with a brief description of how the teachers were selected to participate in the training program, and the process by which they were assigned to treatment groups on the basis of the five measures. We examined the relationship of empirical measures of receptivity to the population under study. In addition, the sample is examined in terms of the demographic characteristics of the teachers. These findings demonstrate the representativeness of the sample.

This section concludes with a description of the training program. It includes the ways that the sample population is distributed across treatment groups.

Selection of Teachers

The teachers selected for the training program represented four distinct communities: rural, working-class suburban, upper-middle class suburban, and urban. By selecting teachers from these four diverse areas, the researchers assumed that trainees had a variety of learning styles.

In each of the four school systems, teachers were presented with brochures which contained applications to participate in the program. Twenty participants from each community were selected on a first-come first-served basis. Four graduate credits were awarded by Boston University School of Education for the successful completion of the training program.

Operationalizing Hunt's Model: Instrument Development

This section will present five measures which attempted to define the criteria for classifying teachers in career education projects as low receptive or high receptive to the goals of the inservice program in terms of Hunt's three accessibility criteria: cognitive orientation, motivational orientation, and value orientation. The project did not address the sensory orientation.

One of the first tasks of the research project was to select and develop instruments which operationalized the cognitive, motivational, and value orientation dimensions. The researchers attempted to find or develop a cluster of measures which trainees could efficiently and economically administer, and which would differentiate teachers in terms of the three learning characteristics suggested by Hunt. Operationalizing accessibility characteristics on all three dimensions would enable us to adequately describe the variability of personality traits in terms of a total receptivity measure and will eventually enable the researchers to classify teachers by matching personal characteristics (receptivity) to appropriate instructional environments (structure).

The scales selected for the cognitive orientation were operationalized by Rokeach's dogmatism scale and Rehfesch's social rigidity scale. The researchers developed their own scale to measure the motivational and value orientations. The motivational orientation will be described by a motivational scale, and the value orientation will be measured by an innovation scale and teaching structure scale.

Each of these scales will be discussed in terms of a rationale for selection or development; a description of what the scale measures; (where available) the results of the testing of the scale on other populations; the present subjects, and the conformity of the empirical measurement to the theoretical concept. As part of the last discussion, the results of a factor analysis of the five measures will be presented.

C. Cognitive Orientation: A Rationale for Instrument Selection

Hunt developed a measure of cognitive orientation which required the trainer to analyze responses of the trainees to six statements: "What I think about rules...," "When I am criticized...," "What I think about parents...," "When someone disagrees with me...," "When I am not sure...," and "When I am told what to do..." (Hunt, 1971, p. 37.) These responses were then coded according to a scoring manual (Hunt, Lapen, Liberman, McManus, Post, Sabales, Sweet and Victor, 1968). This measure required an extensive understanding of the conceptual level theory, and the responses to the measure were time-consuming to code. Therefore, the researchers endeavored to find other measures which closely approximated Hunt's with response sets which could be scored easily.

The researchers selected measures which, to some extent, defined two dimensions of cognitive orientation: (1) cognitive complexity (variations in thinking from the concrete to the abstract; variations in receptivity

to change in the face of complex problem situations); (2) interpersonal maturity (variations in empathy ranging from non-understanding of others to awareness). The two measures that were selected by the researchers were Rokeach's Short Dogmatism Scale (Troldahl and Powell, 1965), and Rehfesch's Social Rigidity Scale (Rehfesch, 1958).

Description of the Dogmatism Scale

The dogmatism scale was designed to measure cognitive complexity or individual differences in the "openness or closedness of belief systems" independent of their particular idealogy. Rokeach stated that the extent to which a person's belief system was open was "the extent to which the person can receive, evaluate, and act on relevant information received from the outside on its own intrinsic merits, unencumbered by irrelevant factors in the situation arising from within the person or from the outside." (Rokeach, 1960, p. 57.) This measure differed from scales such as authoritarianism in that it was concerned with the way that an individual adheres to a belief rather than to the specific content of that belief (Robinson and Shaver, 1973, p. 425).

The dogmatism scale was self-administered and took approximately 10 minutes to complete. (See Appendix A for the entire scale.) The respondents were asked the extent to which they agreed or disagreed with such statements as the following:

> There are two kinds of people in this world; those who are for the truth, and those who are against the truth.
>
> I'd like it if I could find someone who would tell me how to solve my personal problems.
>
> Most of the ideas which get printed nowadays aren't worth the paper they are printed on.

Respondents who strongly agreed with the above items were classified as highly dogmatic.

Dogmatism Scale Tested on Other Populations and Population Under Study

Troldahl and Powell (1965) tested the dogmatism scale on two populations: 227 Boston suburbanites, and 84 adults from Lansing, Michigan stratified by social status. These authors reported an internal consistency estimate of .79. Therefore, the researchers of this report felt that this scale could be used without reluctance for research purposes.

Our confidence with using the dogmatism scale was further enhanced by recent research studies which associated dogmatism with other measures related to the conceptual level model. For example, Rem (1970) reported the relationship between values and dogmatism in a study conducted with male students at the Israel Institute of Technology in Haifa. He found that highly dogmatic students placed a significantly higher value on

equality, honesty, and obedience; whereas less dogmatic students placed a higher value on broad-mindedness and independence. Trodahl and Powell, 1965, and Feather, 1971, found a cluster of values associated with dogmatism where salvation and obedience ranked high in relative importance and equality and broad-mindedness ranked low.

In explaining post hoc research findings on attitudinal change studies Rokeach describes dogmatic individuals as perceiving themselves as tolerant and competent but "When they are confronted with credible information about themselves that contradicts such self-conceptions, they are all equally capable of experiencing self-dissatisfaction and to think well of themselves; they change their cognitions and behavior in order to bring them into closer alignment with self-conceptions, thus maintaining, if not enhancing self-conceptions." (Rokeach, 1973, pp. 311-312.) Hence, dogmatic persons tended to have low conceptual levels in that they did not delineate themselves in complex situations.

Our data revealed an alpha of .81. The maximum score for our project was 100. (See Appendix B for scoring instructions.) The mean dogmatism score with our data was 27.65, and the standard deviation was 11.34.

Description of the Social Regidity Scale

The social rigidity scale was selected to measure the interpersonal maturity dimension of the cognitive orientation. According to Hunt's conceptual level theory, low conceptual persons were characterized as less self-controlled, dependent on approval of others, non-assertive, egocentric, conventional, compulsive, anxious in social situations, and intolerant of frustrations. On the other hand, high conceptual level individuals tended to be independent, inquiring, and self-assertive (Hunt and Sullivan, 1974, p. 217).

The social rigidity scale was selected because it measures the following qualities which described low conceptual level individuals: (1) anxiety and constriction in social situations; (2) the need for a stable, orderly, predictable environment, perseverative tendencies; (3) slowness in coming to a decision -- compulsive doubting; (4) conservatism and conventionality; (5) self-doubt and sensitivity to negative criticism; (6) misanthropy and parsimony; (7) emphatic concern with work and study (Robinson and Shaver, 1973, pp. 391-392).

The scale consisted of 39 true-false items which were self-administered, and took ten minutes to complete. (See Appendix A for the entire instrument, and Appendix B for scoring instructions.) The following sample of items measures anxiety in social situations, intolerance of disorder, and misanthropy:

I usually don't like to talk much unless I am with people I know very well.

I must admit that it makes me angry when other people interfere with my daily activity.

Most people inwardly dislike putting themselves out for other people.

Respondents who answered true to the above items were classified as socially rigid. Hence, this measure describes Hunt's low conceptual level trainees who can be more anxious in social solutions, intolerant of ambiguity, and non-empathetic.

The Social Rigidity Scale Tested on Other Populations and the Populations Under Study

The authors of the scale sampled 60 Air Force Captains to determine the reliability and validity of the scale. They reported a corrected split-half reliability of .72. To validate the scale, data were obtained from an item analysis of Institute Personality Adjustment Research (IPAR) staff rating of each subject on the Gough Adjective Checklist. The adjective composites for the highest 18 were compared, and were found to differentiate significantly between high and low scores. This differentiation can be applied to persons who have high and low conceptual levels. Adjectives checked by persons scording high in social rigidity were as follows: anxious, conscientious, conservative, deliberate, dependent, gentle, inhibited, mild, moderate, modest, painstaking, peaceable, quiet, reserved, retiring, serious, shy, sincere, submissive, thorough, timid, withdrawn, worrying. Adjectives checked by persons scoring low in social rigidity were as follows: active, adaptable, aggressive, argumentative, assertive, clear-thinking, confident, curious, demanding, energetic, independent, irritable, organized, outgoing, outspoken, painful, poised, quick, resourceful, self-centered, self-confident, self-seeking, sociable, spontaneous, talkative, and versatile.

Other studies cross-validated this scale. Using two samples of Air Force Captains the author found the rigidity scale to be significantly positively related level to the Minnesota Multiphasic Personality Inventory scales of social introversion and anxiety and significantly negatively related to the K scale of ego-strength and leadership. The author found significant negative correlations of the scale with the California Psychological Inventory measuring sociability, social presence, intellectual scholastic achievement, and intellectual efficiency.

For a sample of 343 Air Force Captains and 70 medical student applicants, the mean on the rigidity scale was 15.77, and the standard deviation 5.21. The researchers felt confident that the items on this scale measured social characteristics of Hunt's low conceptual level trainees because of the scale's reliability, validity, and variability. This confidence was further enhanced when the scale was tested on our population.

For our sample of 74 trainees, the mean on the regidity scale was 12.32, and the standard deviation was 4.20. The mean rigidity score was lower for our population of school teachers than the reported mean for Air Force Captains and medical school applicants. However, the scale did show considerable variability in our population. The reliability alpha for our data was .93, an excellent reliability level for using the scale for research purposes, and considerably higher than reported by the authors of the scale.

D. Motivational Orientation

1. Definition: The motivational orientation was defined in terms of reward and feedback preferences of individuals. The researchers were unable to find suitable paper and pencil measures for this dimension and therefore developed their own instrument to measure the degree of preference for intrinsic rather than extrinsic rewards and self-defined rather than normative feedback.

2. Description of the Scale: The scale is a forced-choice measure. The respondents were asked to select one of the two statements that described methods of evaluation of their teaching performance or graduate course work. (See Appendix A for the scale as presented in the questionnaire, and Appendix B for instructions on scoring.) The researchers performed a factor analysis on the 19 item scale to establish empirically the factors contributing to motivational orientation as operationalized here. Alternatives marked with a plus (+) received one point; and those marked with a minus (-) received zero points. The factor analysis revealed four factors. The starred items in the factor analyses to be presented represent items scored on two factors and were included in both enumerations for their contribution to defining both factors. These double-item loadings were the clearest indication that the underlying factors being measured were not truly orthogonal.

The first factor related to the source of the feedback, which was subjective, non-criterion-oriented.

Factor I: Non-Criterion vs Oriented Feedback Source.

Item 4	+	I evaluate my teaching by the criteria I establish and I feel are important.
.67	-	I evaluate my teaching by the criteria the administration establishes.
Item 6*	+	I would prefer to receive a report of my teaching evaluation in the form of a personal letter or conference.
.51	-	I would prefer to receive a report of my teaching evaluation in the form of a report card or objective, standardized form letter.
Item 14	+	I would like the projects in this course to be evaluated by my fellow students.
.50	-	I would like the people in this course to be evaluated by my instructors.

Factor I: Non-Criterion vs Oriented Feedback Source (Continued).

Item 10	-	The grade I receive in this course is very important to me.
.47		
	+	I am not concerned about the grade I receive in this course.
Item 8	+	I evaluate my teaching by what other teachers and students say about me.
.41		
	-	I evaluate my teaching by what the administration says about me.
Item 1	+	I would like to be evaluated only by my teaching colleagues.
.34		
	-	I would like to be evaluated only by the school admintration.

Factor II related to the time element in feedback (i.e., a preference for deferred feedback).

Factor II: Delayed Feedback

Item 15	-	I would like to receive immediate feedback on the project I do for this course.
.80		
	+	I can wait until the end of the term to receive my grades on the projects.
Item 7	-	When I am evaluated, I would like the evaluator to tell me what he/she thinks immediately.
.62		
	+	When I am evaluated, I would not care when the evaluator issues his/her report.
Item 12	-	I would like this course to have short quizzes so I'll know where I stand.
.33*		
	+	I prefer to have a final exam only.
Item 19*	-	I would like the instructors of the course to tell me what's right or wrong about my course performance.
-.34		
	+	I would like the instructors of this course to discuss with me how I am performing in this course.

Factor III related to preferences for an individualized rather than a norm-referenced or group approach to evaluation.

Factor III: Individualized Approach to Evaluation

Item 2	+	I would like the evaluator to discuss with me the ways I am performing and doing things in the classroom.
.60	-	I would like the evaluator to tell me what's right or wrong about my teaching.
Item 5	+	Teaching evaluations should be objective and absolute.
.47	-	Teaching evaluations should be subjective and relative.
Item 6*	+	I would prefer to receive a report of my teaching evaluation in the form of a personal letter or conference.
.42	-	I would prefer to receive a report of my teaching evaluation in the form of a report card or objective, standardized form letter.
Item 19*	+	I would like the instructors of this course to discuss with me how I am performing in the course.
.27	-	I would like the instructors of the course to tell me what's right or wrong about my course performance.
Item 18*	+	I would like the instructors of this course to use criterion-referenced system of grading (a grading system based on mastering of objectives).
.29	-	I would like the instructors of this course to use a norm-based system of grading (a grading system based on the bell-shaped curve).
Item 1*	+	I would like to be evaluated only by my teaching colleagues.
.43	-	I would like to be evaluated only by the school administration.
Item 13	+	I would like to work on a group project and be evaluated as a group.
.27	-	I would prefer to work alone and be evaluated on my own work.

Factor IV seemed to identify persons who were concerned with grades.

Factor IV: Evaluation Concern

Item 3	+	I would like to grade myself on my teaching performance.
.74		
	-	I would like to receive a grade from my evaluator.
Item 17	+	I would like to write my own exams and answer them.
.45	-	I would like to take exams written only by the instructors of the course.
Item 5	+	Teaching evaluations should be subjective and relative.
.29*		
	-	Teaching evaluations should be objective and absolute.
Item 11	+	If a written exam were given, I would prefer it to be essay type.
-.28		
	-	If a multiple exam were given, I would prefer it to be essay type.
Item 16		If I received a C in this course:
	+	I would be concerned, and make inquiries.
-.25	-	I would be very upset and angry and feel that I have been "cheated."

Therefore, the scale was defined by four factors: non-criterion oriented feedback sources; delayed feedback; individualized approaches to evaluation; and evaluation concern. These factors describe the reward and feedback preferences of individuals.

Table 1. Varimax Rotated Factor Matrix for Motivation Scale

	Factor I Non-Criterion Oriented Feedback	Factor II Delayed Feedback	Factor III Individualized Feedback	Factor IV Evaluation Concerns
Item 1	.33	-.17	-.43	.02
2	-.04	-.23	.60	-.08
3	.19	.05	-.03	.73
4	.67	.02	.13	.03
5	.17	.05	.47	.29
6	.51	.01	.42	.04
7	-.08	.62	.08	.19
8	.41	.04	-.15	.08
9	.12	.18	.20	.03
10	.47	.20	.10	.01
11	.23	-.09	-.12	-.28
12	.34	.33	.01	-.12
13	.02	-.01	-.27	-.04
14	.50	-.07	-.06	.22
15	.15	.80	.13	.04
16	-.02	.02	.17	.25
17	.05	-.02	-.07	.44
18	.01	.17	.29	-.04
19	.02	-.34	.27	.03

The respondent was awarded one point if the response demonstrated a preference for intrinsic rewards and self-defined feedback. The respondent received a zero if the response demonstrated a preference for extrinsic rewards and normative feedback. The total score was 19. The scale is coded to demonstrate how each response was scored.

3. Descriptive Statistics and Reliability with Populations Under Study: The maximum score on the motivational scale is 19. In our sample of 78 trainees the mean score was 11.94, and the standard deviation 2.62. The researchers concluded that the scale did show variability among respondents whom have extrinsic or intrinsic motivational preferences and normative or self-defined feedback preferences. Our internal consistency estimate was .49, which is low for a test which was used in research. Doubtless, the forced-choice nature of the response methodologically contributed to this low reliability estimate. Multiple-choice items would have increased the reliability.

4. Results and Conclusions: The positive points of this scale are that its items have face validity. The factor analyses describe items which defined aspects of reward and feedback systems, and the scale seemed to vary among respondents in this study. Therefore, the scale was included in our measure of receptivity. However, the scale had low reliability and items should be re-written to improve its reliability.

E. Value Orientation

1. Definition: Value orientation was defined in terms of the latitude of acceptance toward the general objectives of the inservice program. Hunt suggested that more than one measure of value orientation be used (Hunt, 1971), and this project had defined two measures of inservice training program goals: innovation realization and differentiated teaching. The first instrument, the innovation scale measured the environment of teachers, and the school system with new curriculum procedures. The second instrument, the teaching structure scale measured the degree to which teachers use flexibility and unstructured approaches in teaching.

2. Rationale and Description of Innovation Scale: The innovation scale was chosen as a measure for the following assumptions: (1) that teachers who were involved with innovations had more positive attitudes toward infusing career education into the curriculum; (2) that school systems varied in their receptivity to new educational methods because of differentiated tax structures, community values and other factors; (3) that more innovative teachers chose systems which used more recent methods and materials; (4) that once in the system, teachers were socialized by it, and conformed to the norms of the system in the implementation of new educational procedures.

The innovation scale, which was self-administered and took five minutes to compute, contained a list of 27 curriculum innovations of the last 15 years. Curriculum innovations included such procedures as team teaching, value clarification, drug abuse education, game simulation, and non-graded classes. The respondent was asked to indicate whether or not the innovation was present in his/her school. (See Appendix A for the entire scale, and Appendix B for scoring instructions.)

3. Descriptive Statistics on Innovation Scale and Reliability Measures: The maximum score for the innovation scale is 27. The mean score for 79 trainees was 12.86, with a standard deviation of 5.39. Hence, the scale demonstrated variables among all teachers. The researchers hypothesized that this scale should also measure differences among school systems. This hypothesis was confirmed by the data presented in Table II. Upon observation, mean scores appear to be significantly different, and the analysis of variance performed on the innovation scale (Table III), revealed a significant F ratio. A Sheffe multiple range test was performed to localize system differences. The test revealed that the upper middle class school had a significantly higher mean score than the urban and lower middle class school.

Table 2. The Mean and Standard Deviation of the Innovative Scale by School System

	Rural	Upper Suburban	Lower Suburban	Urban
Mean	13.17	16.76	11.81	9.47
SD	4.07	5.63	3.53	5.49
n	17	21	22	19

Table 3. Analyses of Variance of Innovation Scale by Town

Source	df	Sum of Squares	Mean Squares	F Ratio	F Probability
Between Groups	3	563.179	187.726	8.27	.0001
Within Groups	74	1702.29	22.69		

The alpha reliability on this scale was .83, a respectable reliability correlation for an instrument that was used in a research study. The innovation scale then appears to discriminate well between systems and has an acceptable level of reliability.

4. Description of Teaching Structure Scale: The researchers assumed that teachers who were more receptive to the goals of

the training program if they had flexible, unstructured approaches to teaching. Hence a scale was developed to measure notions of classroom structure.

A factor analysis was conducted on the 21 item scale to see which items correlated with each other in the hope of defining some of the dimensions that the scale measured (see Table 3). Four underlying factors emerge from the factor analyses which begin to describe the dimensions of the teaching structure scale. Factor I defined teachers who did individualized instruction.

Table 4. Varimax Rotated Factor Matrix for Teaching Structure Scale

	Individualization of Instruction	Planning for Student Interaction	Planning for Flexibility	Parent Participation
Items 1	.11	-.71	.15	.07
2	.54	.18	.00	.09
3	.71	.28	-.03	.05
4	.27	.34	.48	-.06
5	.36	-.16	.05	.15
6	.58	.21	.25	.18
7	.17	.20	.55	-.27
8	-.31	.19	.23	.07
9	.13	.07	.08	.60
10	.42	.09	.36	-.10
11	-.05	.02	.55	.13
12	.50	.15	.26	.11
13	.81	.21	.04	.07
14	.03	-.04	.56	.51
15	.11	.27	.03	-.29
16	.31	.41	-.04	.60
17	.53	.04	.09	-.23
18	.10	.17	.41	.03
19	.08	.75	.18	-.06
20	.43	.08	.30	.14
21	.22	.52	.15	.16

Factor I. Individualization of Instruction

.81	Item 53	Every student gets a copy of the same book to work from.
.71	Item 43	All students work at the same lesson going on in the front of the room.
.58	Item 46	Several small groups of students work at different tasks in several parts of the room.
.54	Item 42	Students cannot move about the room without asking permission.
.53	Item 57	Textbooks are my primary teaching material.

Factor I. Individualization of Instruction (Continued)

.50	Item 52	If a student finishes before others are done, he/she can start a new lesson without waiting for the others to complete the assignment.
.43	Item 60	I use many different types of materials besides the textbook.
.42	Item 50	I lecture to my students.
.35	Item 45	I plan how my students will spend a day at school.
-.31	Item 48	I plan teaching activities with my colleagues.

Factor II defined teachers who planned for, and allowed student social interaction in the classroom.

Factor II. Planning for Student Interaction

.75	Item 59	Students may ask other students for help.
.71	Item 41	Students can talk to each other while they work.
.52	Item 61	In my classroom, I arrange the desks in rows.

Factor III called "planning for flexibility in the classroom," defined teachers who were flexible, inquired into new methods, shared information, and planned for teaching approaches which gave students choices.

Factor III. Planning for Flexibility in the Classroom

.56	Item 54	I inquire into new teaching materials and methods.
.55	Item 47	I postpone planned activities in order to do something more pertinent.
.55	Item 51	I share teaching information and materials with my colleagues.
.48	Item 44	I give my students several assignments, and they choose the one they want to work on.
.41	Item 58	I use inductive or inquiry teaching methods.

Factor IV defined parent participation in the curriculum.

Factor IV. Parent Participation in the Curriculum

.60	Item 49	I can call parents on the telephone to report the progress of their child.
.60	Item 56	I invite parents to visit the classroom at their leisure.
-.29	Item 55	I adhere to my lesson plans.

Hence the factor analysis of the teaching structure scale revealed four underlying dimensions of the scale with the data from the trainees in the research project. The authors felt confident that the scale described items that measured individualizing of instruction, planning for student interaction, planning for flexibility, and parent participation.

5. Descriptive Statistics on the Teaching Structure Scale and the Reliability Measure: The maximum score on the 21 item test was 105 (see Appendix B for scoring of instrument). In our data the mean score for 74 trainees was 70.55, and the standard deviation was 9.55. Hence the scale measured variability of teaching styles in the population under study. The coefficient alpha was .83, an acceptable reliability level for a measure used for research purposes.

F. Factor Analysis of Receptivity Scales

A factor analysis was performed on the local scores of the five scales constituting the researchers' operational definition of receptivity: dogmatism, social rigidity, motivation, innovation, and teaching structure, to investigate their interrelationship and "goodness of fit" to the researchers' theoretical conception of receptivity. The dogmatism and social rigidity scale loads about equally on one factor to form the cognitive orientation dimension. The innovation and teaching structure scale contribute about equally to a value orientation factor. The motivation orientation scale emerges as a separate factor.

Table 5. Varimax Rotated Factor Matrix

Scales	Cognitive Orientation Factor I	Value Orientation Factor II	Motivation Orientation Factor III
Innovation	.07	.48	-.16
Teaching Structure	-.19	.47	.13
Motivation	-.12	-.03	.46
Dogmatism	.60	-.06	-.24
Rigidity	.64	-.04	-.06

In view of the results of this confirmatory analysis, the researchers felt confident that the cluster of measures which operationalized receptivity can be mapped to the three accessibility characteristics of the theoretical definition of the concept: cognitive orientation, motivational orientation, and value orientation. These measures (with the exception of the motivational scale) had acceptable reliability coefficients for research purposes. Having defined empirically the concept of receptivity, the next section of the report examines receptivity with regard to the population under study, describes the population with regard to the variability of its demographic characteristics and their relationship to receptivity, and discusses the method of classification of trainees in terms of receptivity and instructional program variables (structure).

G. Receptivity and the Population Under Study

1. Introduction: This report has defined the learning characteristics of teachers in terms of David Hunt's conceptual level model. The section entitled research design endeavored to operationalize the model by empirically defining the receptivity measure. The next section will examine the receptivity measures for relationship to the population under study. The report will describe the demographic characteristics of the trainees, discuss the classification of the sample into two sub-populations of low and high receptivity learners, and report the relationship of receptivity to the demographic variables. Having defined the population under study in terms of their personal learning characteristics, the researchers will present the design of the training programs where low- and high-receptivity individuals were matched or mismatched to high-structured (teacher-centered) or low-structured (student-centered) instructional programs.

2. Demographic Characteristics of Teachers: This section will present the demographic characteristics of teachers. The researchers were concerned with whether the sample under study was representative of a variety of teachers in terms of age, sex, marital status, income, teaching experience, level of educational attainment, recency of degree, recency of additional course work, number of professional organizations, level of involvement in professional organizations, amount of professional reading and subject areas taught. With the exception of sex, marital status, and subject areas taught, responses were arranged ordinally to simplify data analysis.

Nineteen teachers were recruited from the urban, 21 from the upper-middle class suburban, 22 from the lower middle class, and 17 from the rural communities. Nineteen were male, and 60 were female. Unfortunately, the sample is biased toward females, but representative of teachers who teach in various geographic communities.

Various age levels of teachers are represented in our sample. Twenty-nine percent were from 20-29 years of age, 41% were 30-39 years of age, 15% were from 40-49 years of age, 13% were from 50-59 years of age, and 1% were 60 years old or older.

Over one-half of the teachers were married, and approximately one-third had never been married. Five percent were either separated or divorced, 4% were widowed.

The family income ranges were as follows: 19% between $10,000 to $15,000, 17% between $16,000-$20,000, 13% between $20,000-$25,000, and 51% over $25,000 dollars.

With regard to the number of years in the educational profession, 15% had been members for less than three years. Fourteen percent were members from 3 to 5 years, 28% from 6 to 10 years, 25% from 11 to 15 years, and 18% for more than 15 years. The sample is representative of teachers with various years of teaching experience.

Twenty-nine percent of the teachers had a bachelor's degree in education, while 13% had a B.A. in other fields. Thirty-three percent had a masters degree, and 20% had a masters degree plus 30 additional credit hours or a certificate of advanced study. Five percent (4) had doctorates. The teachers of this sample are representative of teachers with various degree attainments.

One quarter of the trainees received their highest degree less than 3 years ago. Twenty-three percent received their highest degree 3-5 years ago, 26% - 6 to 10 years ago, 16% - 11 to 15 years ago, and 9 percent over 15 years ago. Over 75% of the trainees obtained additional academic credit within the last three years. Hence, this population of teachers were accustomed to taking graduate courses for professional advancement.

Twenty-five percent of the population stated that they belonged to one professional organization, another 25% belonged to two, and another quarter stated they belonged to three. Fourteen percent belonged to 4, and 15% belonged to 5 or more professional organizations. With regard to the level of organizational involvement, a quarter reported high involvement, 30% reported some involvement, 24% reported no involvement. Membership and involvement in organizations varied among this population.

The amount of reading of professional journals also varied among the population under study. Over 1/3 of the trainees reported that they read educational journals or newsletters related to teaching less than one hour per week, 43% from one to three hours per week, 11% from three to five hours per week, and 10% for more than five hours per week.

Almost half of the population taught all elementary school subjects. Four teachers taught math and science only, while three teachers taught language arts and social studies only. One teacher taught either art or music. Ten teachers only taught reading. Twenty-five persons either

taught at the high school level or were administrators. Hence, elementary school teachers are over-represented in the sample.

After examining these data, the researchers felt assured that the population under study was representative of teachers in terms of geographic area, age, marital status, income, teaching experience, level of educational attainment, recency of degree, number and level of involvement in professional organizations, and the amount of professional reading. We felt confident that the results of this study can, therefore, be generalized to the general teaching population.

3. Sub-Populations of the Sample: Low- and High-Receptivity Trainees.

   a. Defining Low- and High-Receptive Trainees: Receptivity has been empirically defined as a cluster of measures which are related to a person's cognitive orientation (lack of dogmatism and rigidity), motivational orientation (motivational scale), and value orientation (innovation and teaching structure scale). In a previous section, the researchers demonstrated that this cluster of measures adequately measured the variability of the learning characteristics of teachers. In this section, the receptivity measure was computed and used to classify subjects into high- and low-receptive subpopulations. This classification of subjects will eventually allow the researchers to test whether or not different learning styles of teachers (receptivity) are differentially affected by different patterns of instruction.

Subjects were classified as either high- or low-receptive, depending upon scores of the five-cluster measure defined above. Each trainee was assigned a standardized ($\underline{z}$) score on each of the five scales. The following formula was used to compute the total receptivity score for each subject. Receptivity is equal to the score on the motivational scale, plus the score on the innovation and teaching structure scale, minus the score on the dogmatism and rigidity scale.

Receptivity = Motivation + Innovation + Teaching Structure (-Dogmatism + Rigidity)

Subjects were classified into two groups, depending on whether their score was either at or above the median receptivity score, or below the median. (The median receptivity score was .46.) Of the original 79 subjects, 34 each were classified as high-receptive or low-receptive, and 15 were excluded from the analysis because of missing data on one or more of the constitutive scales.

   b. Examining Data for Bias: The researchers were concerned with whether the subpopulations of low- and high-receptive individuals were equally distributed among the school systems under study. Table IV displays the distribution

Table 6. Receptivity by School System Community

	Urban	Upper Suburban	Rural	Lower Suburban	Raw Total
Receptive					
Low	5	10	9	10	34
High	8	9	7	10	34
Column Total	13	19	16	20	68

Chi Square = 0.99 with 3 Degrees of Freedom Significance $p < .05$

of receptivity categories across school systems and reveals no significant departure from randomness in the distribution.

The researchers also examined the distribution of mean scores on the standardized receptivity scale and of the individual standardized subscales across school systems to see if there were statistically significant mean score differences by school system. Table 7 shows the standardized receptivity score and the receptivity scale scores by school system; an analysis of variance was performed on the total receptivity score by school system. A non-significant F ratio demonstrated that there were no significant differences in the local receptivity score by school system. An analysis of variance was also performed for each of the accessibility scales (dogmatism, rigidity, motivation, innovation, teaching structure) by school system. Only a significant F ratio for the innovation scale was found, and this result is discussed in a previous section of the research design. Therefore, the researchers felt confident that low- and high-receptive individuals were equally distributed across the four various school systems.

4. Demographic Correlates to Receptivity: The researchers also examined the relationship between receptivity and the demographic information collected as part of the study to define further Hunt's conceptual level construct. For example, David Hunt found significant correlation (.17) with age and the conceptual level of school-age children, which helped to confirm the developmental nature of the model. The same correlation between age and receptivity appears in our data, however, it falls short of significance because of a smaller sample size than Hunt's (see Table 5). Income and teaching experience appear to positively correlate with receptivity. These correlations are probably a product of the age receptivity relationship.

Table 10 reveals significant positive correlations with receptivity and number of journals read and professional organization memberships. According to Hunt's theory, high receptive persons would more likely belong to more organizations, and read more educational journals because high conceptual level persons tend to be more socially out-going and think in more complex ways than low receptive (low conceptual level) persons.

Table 7. The Mean and Standard Deviation of Standardized Score and Receptivity Scales by School System

School System	Z Receptiviy Score	Dogmatism	Rigidity	Motivation	Innovation	Teaching Structure
Rural						
Mean	.66	.05	-.58	.09	.06	.24
SD	2.40	.89	.73	.82	.83	1.12
n	16	17	17	16	17	16
Upper Suburban						
Mean	.35	.27	.04	-.33	.79	.23
SD	3.01	.98	1.05	.89	1.14	.912
n	19	21	19	19	21	21
Lower Suburban						
Mean	-.04	-.27	-0.13	.23	-.21	-.38
SD	3.09	.97	1.01	1.27	.72	.77
n	20	21	22	22	22	16
Urban						
Mean	.58	-.05	-.34	.18	-.68	-0.04
SD	3.92	1.13	1.12	.83	1.11	1.17
n	13	19	16	19	19	16

Table 8. Pearson Correlation Coefficients of Receptivity to Demographic Variables

	Age	Income	Teaching Experience	No. of Organizational Memberships	No. of Journals Read
Correlation	.17	.21	.14	.29	.22
n	68	67	68	50	68
Significance	$p = .08$	$p < .05$	$p < .05$	$p < .05$	$p < .05$

Receptivity is significantly correlated to sex. The mean score (.78) for females is significantly higher than the mean score (-1.03) for males ($t = -2.14$ $p < .05$). Using the conceptual level measure, Hunt and Dopyera, 1966, found adolescent girls to be significantly higher than males. They attributed these findings to differences in developmental rates. Our data, however, indicates that these differences are not developmental but sex-linked. This finding deserves further investigation than is possible with our present sample.

5. Design of the Training Groups: Receptivity by Structure of the Training Program: Having empirically defined receptivity and tested this measure with the population in this study, the researchers will now explain the design of the training program groups by receptivity, and the structure of the training program variables. The researchers will also present evidence to demonstrate the unbiased nature of these groups.

Eight different training groups (two groups in each of the four communities) were formed. In each community, one session was highly structured (trainer-controlled environment). The other session was moderately unstructured (the trainer as well as the trainees controlled the environment). To control for teacher effects in the data analysis the four area trainers taught both the high structured and low structured sessions. Students assigned themselves to the two different groups on the basis of their time preferences for an earlier or later session without previous knowledge of session structures. These preferences were honored by a first-come, first-serve basis.

Each of the eight training sessions theoretically and empirically contained trainees who varied in their accessibility characteristics. Some trainees were high-receptive. In a theoretical sense, they saw the world in more complex ways, had better interpersonal skills, were intrinsically motivated, valued innovations and flexibility in teaching. Empirically, these persons had a high receptivity score (a total score at or above the median.)

Other teachers were classified as low-receptive. In contrast, these people saw the world in concrete ways, were non-empathic, extrinsically motivated, less involved with educational innovation, and more structured in their approaches to teaching. Empirically, these trainees had a low-receptivity score (a total score which fell below the median).

Table 9 shows number of persons matched and mismatched in training sessions. According to Hunt's model, matched individuals are defined as low-receptive persons in high-structured groups, and high-receptive persons in low-structured training programs. Mismatched trainees are defined as low receptive persons in low structured groups, and high receptive persons in low structured groups. A non-significant chi-square statistic (see Table 9) demonstrated that receptive persons were randomly assigned across the variable of structure, and that the assignment of personality types to the learning environments were, therefore, unbiased.

Table 9. Persons Matched and Mismatched in Training Groups

Receptivity	Structure of Session Low	High	Raw Total
Low	15	18	33
High	18	15	33
Column Total	33	33	66

Chi Square = .24 with 1 Degree of Freedom $p < .05$

H. Conclusions

This research project was based upon the assumption that teachers vary in their learning styles, and therefore, require different patterns of instruction. It further assumed that the different instructional programs will interact with the learning characteristics of teachers to produce differentiated effects from the inservice program.

The first task of this report was to present a theory of instruction, which would help us address the question of teacher personality variables, and the interactive effects of employing different patterns of instruction to promote effective inservice program goals. David Hunt's conceptual level model was used to derive three accessibility characteristics of teachers (cognitive orientation, motivational orientation, and value orientation).

The second task of this project was to relate Hunt's three accessibility characteristics of trainees (collectively refered to as receptivity), and empirically define these terms by selecting and analyzing a cluster of appropriate measures. The cognitive orientation was measured by the dogmatism and rigidity scales; the motivational orientation was measured by a motivational scale; and the value orientation was measued by the innovation and teaching structure scales. As a result of receiving and/or performing statistical analyses, the researchers felt confident that the instruments operationalized our theoretical notions of receptivity.

The third task of the researchers was to describe the population in this study and to apply the receptivity measure to this population. The researchers felt confident that this population was representative of teachers in general, that the receptivity measure adequately described the two subpopulations of low- and high-receptive trainees.

The fourth task of the resarchers was to describe the design of the training groups by receptivity and instructional programs so that the researchers would be able to test the interaction of the learning characteristics of teachers (receptivity) and the instructional programs (structure). The next volume will address this question as part of the sumamtive evaluation design.

CHAPTER IV

THE SUMMATIVE EVALUATION OF THE CAREER EDUCATION TRAINING PROGRAM

A. Introduction

This section presents the summative evaluation design of the career education training program, the development of the cognitive and affective instruments, and summative evaluation results of the study.

B. Evaluation Design

The summative evaluation component of this research project measured the effectiveness of training 80 teachers in the concepts and methodologies of career education. The inservice training project was based upon the assumption that teachers vary in their learning styles and need to be taught differentially in order to maximize their achievement of the training program's objectives.

The researchers have defined the learning characteristics of the teachers in terms of their "receptivity" to the goals of a training program. Three of David Hunt's "accessibility characteristics" of trainees were used to conceptualize the "receptive" teachers. These three concepts were cognitive orientation: the way trainees look at the world; motivational orientation: trainees' preferences for various reward and feedback systems; and value orientation: trainees' latitude of acceptance of the goals of the program. According to Hunt's theory, high receptive teachers thought more abstractly, preferred intrinsic rewards and self-defined feedback, and valued innovation and differentiated teaching. On the other hand, low receptive teachers thought more concretely, preferred extrinsic rewards and normative feedback, and did not value innovation and differentiated teaching as much as high receptive trainees.

The two different types of training manuals that were developed and employed in this study defined these two distinct learning environments. One manual was high structured, defining a teacher-controlled environment, and the other was low structured and defined a teacher/student controlled environment.

Hunt's theory suggested that the learning characteristics of teachers could be matched to the environmental structures. High receptive teachers should benefit more from a low structured program than a high structured one, and low receptive teachers should learn more in a high structured program than one which was low structured.

Eighty teachers were randomly assigned to either a high or low structured instructional group (see volume I for a description of the selection of teachers). Both groups were taught by the same teacher to control for teacher bias.

The trainees were given a series of paper and pencil measures (see Appendix A, B, and C) during the first session of the training program.

The cognitive orientation was measured by Rokeach's dogmatism and Rehfesch's social regidity scale, their motivational orientation was examined by the researchers' motivational scale, and the value orientation was operationalized by the researchers' innovation and teaching structure scale. Receptivity was operationally defined as the sum of a subject score on a motivational scale, (a measure of reward and feedback preferences), an innovation scale (the number of innovations in the trainees' school system), and a teaching structure scale (teacher flexibility in determining classroom structure), minus his score on the dogmatism and social rigidity scale.

Each participant was also given a cognitive and affective test which measured the goals of the training program. The project director had developed the cognitive test, and previously used it in graduate career education programs. The affective test, the Career Education Inventory was used many times by the author of the test to measure attitude toward career education. During the final session the trainees were readministered the same two instruments. The gain measured from pre-test to post-test were analyzed to address the following four summative evaluation questions:

1. To what extent has the training program been effective?

2. Do differentiated training programs (high and low structures) in career education affect teachers differently?

3. Can the results of the training program be explained in accordance with different learning characteristics of teachers?

4. Can the effectiveness of the program be explained by the interactive effects of receptivity and structure?

To answer the first question relating to overall program effectiveness, the researchers' analyzed the data from cognitive and affective instruments, which were administered before and after the training program. Gain scores on both measures were computed and tested for statistical significance.

The second question addressed the issue of whether a high structured training program (teacher-centered environment) or low structured training program (teacher and student-centered environment) was more effective. To answer this question, mean gain scores on both cognitive and affective tests for high vs. low structured groups were compared and tested for statistically significant differences.

The third question compared the personal characteristics of teachers (receptivity) with the cognitive and affective gain scores. This relationship can be statistically expressed and tested for significance either by a correlational analysis, such as multiple regression, or categorical, as in an analysis of variance. Both analyses were performed with little difference in results. The results, therefore, will be reported here on analyses of variance terms, since these are more readily intelligible and more intuitively appropriate to the interaction hypothesis suggested by our four evaluation questions. To obtain the categories necessary for

the latter analyses, subjects were classified as either high or low receptive depending upon their score's relationship to the group median value on receptivity as operationally defined above.

The interaction hypotheses address the following questions:

1. Do low receptive teachers perform better in high-structured groups than do low receptive teachers in low-structured groups?

2. Do high-receptive teachers perform better in low-structured groups than do high-receptive teachers in high-structured groups?

Before these four summative evaluation equations are addressed, an in-depth discussion of the cognitive and affective instruments will be presented.

C. The Cognitive Instrument

1. Rationale

The cognitive instrument, which was developed by one of the project directors for use in graduate courses in career education, was used as a measure of the cognitive goals of the training program for two reasons: First, the test, though not a standardized instrument, had successfully discriminated between students who mastered or failed to master the objectives of a graduate course in career education for many academic terms. Second, the instrument was criterion-referenced to the skills being taught in the training program. Table 1 charts the test items by topic and session.

Table 1. Table of Specifications by Topic and Session of Training

Session #	Topic	Test Items
1 & 2	Introduction to Career Education	1-11
3	Eight Elements and Career Education Theory	12-21,22,23
4	Mapping Curriculum to Career Education	24
5 & 6	Infusing Career Education into Academic Subjects	25-27
7	Role Playing	28-30
8	Developing Interest Centers	31-34
9	Community Resources	35-41
10 & 11	Writing Instructional Units	42-44
12 & 13	Evaluating Career Education Materials	45-46
14	Role/Function of School Personnel	47-50
15	Course Evaluation	

2. The Table of Skill Specification

The cognitive test contained items which measure the various levels of cognitive skills. Table 2 places each item in the list on a Table of Specifications in accordance with Bloom's Taxonomy of Educational Objectives. Items placed in the knowledge category required the trainees to recall specific definitions of terms associated with career education and curruculum. For example, item 6 tests the learner's recall of the definition of career education:

_____ is the totality of experiences through which one learns about and prepares to engage in work as part of his/her way of living.

1. Career education
2. Work
3. Leisure
4. Volunteer activity
5. Counseling

Questions which fall under the heading of comprehension required the learner to choose the correct answer by interpreting, translating or predicting consequences or effects, in addition to recalling specific information. For example, question 1:

Which of the following is not an appropriate outcome of an individual career infusion activity?

a. reinforcement of the academic subject
b. increased student self-awareness
c. acquisition of a saleable skill
d. occupational awareness
e. development of one of the elements

In this question the student had to recall, not only the definition of individual career infusion activity, but also had to predict its appropriate outcomes.

Application questions required the students to demonstrate understanding of the principles involved in infusing career education into the curriculum, developing interest centers, and writing instructional units and evaluation of career education materials. The students should be able to apply these principles to new and concrete situations. For example, item 26:

Which of the following would not be an appropriate career awareness infusion activity?

a. a two-week unit on measurement in the math curriculum
b. occupational crossword puzzle
c. a six-week study of colleges offering specific programs of interest to students
d. a personal journal of likes and dislikes kept as part of the language arts program

e. reading a book and writing a report about the career of a favorite personal hero.

To answer this question correctly the respondent had to not only know the definition of a career awareness infusion activity, but also had to be able to apply the principles of infusing career education into academic subject areas.

Analysis questions required students to break down material into component parts of its underlying organizational principles. Questions 12-21, which were matching questions, required analytical skills because the individuals had to see the relationship between teaching activities and components of the career education curriculum model to answer them correctly. The questions were as follows:

Match each of the following activities (12-21) to the career education element it would best achieve. Note: An element may be used more than once.

12. Decision-making through role-playing
13. Value clarification related to work values
14. Occupational information game
15. Review of college catalogues to find specific programs
16. Interviewing people at their places of work
17. Establishing and running a company in your classroom
18. Building a section of a house in industrial arts
19. Studying the career of your favorite musician
20. Keeping a personal daily log of your activities, likes and dislikes
21. Learning how to repair automobiles

a. self-awareness
b. career awareness
c. appreciations and attitudes
d. educational awareness
e. economic awareness
f. decision-making skills
g. skill awareness and beginning competence
h. employability skills

Evaluation questions required trainees to make judgments for particular purposes by the use of criteria either given to them by their teachers or developed by themselves. Question 46 could be classified as an evaluation question.

In linking a career awareness activity to its broader curriculum perspective, which of the following possible linkages would not be appropriate?

a. subject area
b. career education element
c. ease of administration
d. occupational cluster
e. none of the above

Here, the student was required to make a value judgment as to the appropriateness of career education linkages to the general curriculum.

Table 2. Table of Specifications of Cognitive Test by Skill Level

Level of Cognitive Skill	Item Number
Knowledge	4, 5, 6, 7, 9, 10, 22, 23, 27, 28, 44, 45
Comprehension	1, 2, 3, 8, 11, 30, 31, 32, 33, 42, 43
Application	24, 25, 26, 29, 34
Analysis	12-21 35-41 47-50
Evaluation	46

3. Item Analysis

An item analysis was performed on the cognitive pre-test. Table 3 shows bi-serial correlation coefficient (an index of item discrimination) and the percentage of persons who correctly answered the question (an index of item difficulty). Items that were classified as poorly discriminating between the items score and the total score were items which had a correlation below .15.

Table 3. Item Analysis of Cognitive Test

Item	Bi-Serial Correlation Coefficient	Percentage of Correct Responses
1	.55	48
2	.22	80
3	.37	26
4	.08	96
5	.23	48
6	-.16	99
7	.16	35
8	.20	35
9	.17	74
10	.06	42
11	.23	42
12	.62	70
13	.28	60
14	.44	72
15	.27	68
16	.32	56
17	.31	41
18	.34	56
19	.20	46
20	.35	82

Table 3. Item Analysis of Cognitive Test (Continued)

Item	Bi-Serial Correlation Coefficient	Percentage of Correct Responses
21	.20	63
22	.31	42
23	.28	37
24	.56	62
25	.40	25
26	.26	32
27	.59	62
28	.15	68
29	-.03	20
30	.33	70
31	.22	65
32	.50	76
33	.51	80
34	.43	55
35	.52	78
36	.35	39
37	.26	21
38	.11	33
39	.38	52
40	.39	38
41	.06	51
42	.21	56
43	.13	4
44	.44	75
45	.15	63
46	-.02	51
47	.34	54
48	.18	13
49	.22	55
50	.18	20

Items were defined as too difficult when less than 25% of the population answered them correctly (items 29, 37, 43, 48). Items were classified as too easy when more than 75% of the population answered them correctly (items 2, 4, 6, 20, 32, 33, 35). To improve the reliability of the test, these items should be either revised or excluded, since mid-range scores improve test reliability. The Hoyt estimate of reliability without excluding any item was .60, a result which can be characterized as minimally adequately for research purposes.

The researchers hypothesized that the reliability of the posttest would be greatly improved because the trainees, exposed to the material on the test, should have presented a more internally consistent response set. The Hoyt estimate of reliability on the posttest was .63, demonstrating that the internal consistency of the responses did not greatly improve. This result was disappointing, particularly since the cognitive test was a crucial measure in the pre-post research design. The low reliability might have been caused by matching questions which are

Table. 4. Histogram of Cognitive Pre-Test Scores

Code

10.******(2)

11.****(1)

12.****(1)

16.****(1)

19.****(1)

20.******(2)

21.******(2)

22.**********(4)

23.**********(4)

24.**********(7)

25.**********(6)

26.**********(7)

27.**********(11)

28.**********(7)

29.**********(4)

30.**********(4)

31.******(2)

32.******(2)

33.******(2)

34.****(1)

38.****(1)

inexact. Since scores on one question effect scores on other questions, reliability is normally reduced.

The test was an adequate classroom test which mapped course objectives to test items. The low reliability suggested that the test was not

adequate for future research endeavors. Rewriting the matching questions, and the items suggested by the item analysis should improve test reliability and make the instrument more valid for research purposes.

4. Descriptive Statistics on the Pre-Test Cognitive Instrument

This section presents data which describes the cognitive pretest scores and discusses factors that might bias the nature of pre to post changes. The mean score for the cognitive pretest was 25.65. The standard deviation was 4.93, and the scores ranged from 10 to 38. Table 4, the histogram, shows that the scores are approximately normally distributed. The researchers were very pleased with the result because the variability of the response scores will obviously help to explain future responses to the cognitive test.

Table 5. Mean Scores on Cognitive Pre-Test by School System, Structure, and Sex

School System	Urban	Upper Suburban	Rural	Lower Suburban
Mean	23.67	25.12	27.47	26.00
n	15	17	17	22

Structure	High	Low
Mean	26.33	24.94
n	36	35

Sex	Male	Female
Mean	25.86	25.60
n	14	57

Table 5 displays the mean score on the cognitive pretest by school system, structure, and sex. An analysis of variance was performed on these mean scores to see if the scores differed by school system, curriculum structure, or sex. Such differences would suggest the possibility of bias. However, these analyses of variance revealed non-significant F ratios. Hence, there was no systematic bias in pretreatment levels introduced by school system, curriculum structure of the treatment, or sex of the subject.

D. The Affective Instrument: The Career Education Inventory

1. Description of Instrument

The researchers selected an instrument of generalized attitudes toward career education to measure pre and post-attitudinal changes of the trainer in the inservice program. Since the field lacks adequate measurement tools (Bricknell, 1976; Newell, 1976; Thomas, 1977), it was

difficult to find an instrument which was both reliable and valid. The Career Education Inventory was selected because of its content validity, internal consistency, and test-retest reliability.

The Career Education Inventory was derived from a 72-item instrument by Mannebach, entitled the Career Education Information Inventory (CEII) (1972). The items on the CEII were validated by experts in the field of career education. Principal component analyses by the authors of the Career Education Inventory reduced the large pool of items on the CEII to 29 items. Eight factors were extracted and identified by means of an oblique rotation which accounted for 92% of the local variance. Table 6 contains the factor analysis for Career Education Inventory describing each item by its factor name and loading, and the alpha consistency reliability for factor.

According to the authors of the scale, Factor I, Developing Skills and Competence, defined persons who felt that "career education should assist students in developing positive attitudes regarding work, enhance their social skills, and help them to develop career objectives," (1979). Factor II, Teacher Preparation, suggested that people who score high felt that teachers were not trained to teach career education and that students were not prepared for the work world. Trainees who believed that the school should play a major role in career development, and should place some students into entry-level jobs were defined by factor III, entitlted Career Development. Persons scoring high on factor IV, Program Planning, believed that parents and students should play an important role in the development and maintenance of career education programs.

Factor V, Curriculum Integration described trainees who feel that career education should be infused into the curriculum and that the community was an important resource in this process. Persons who scored high on factor VI, Career Education Methods, considered role-playing, commercially-developed games and self-concept enhancing techniques as appropriate methods in a career education program. Factor VII was labeled by the authors of the scale as Knowledge of Self and the World of Work because trainees scoring high on this factor believed that students should be cognizant of the relationship of the economic system and employment, and that the curriculum should allow students to explore their abilities and interests in relationship to future employment. Factor VIII was entitled Practical Experience because persons scoring high on this instrument believed that real life experience and parent involvement was important in career education programs,

The researchers not only selected the affective test because its content was appropriately mapped to the affective objectives of the training program, but also because the test was reported to have good reliability. The authors reported the alpha reliability of their scale was .85 (our data produced on estimate of .79). The authors administered the test to 64 persons over a seven day interval and reported a test reliability coefficient of .86. (Our data showed a .52 stability

Table 6. Career Education Information Inventory

Item		Loading
	Factor I. Developing Skills and Competence Alpha Consistency Reliability .72	
26	Career education should help students develop positive attitudes toward work.	.61
29	A career education program should enhance the social skills of the students.	.46
10	The schools have the responsibility to help students develop career objectives.	.36
	Factor II. Teacher Preparation Alpha Consistency Reliability .76	
17	Teachers are well prepared to teach in career education programs.	.83
18	College and university teacher educators do an excellent job in preparing teachers to teach in career education programs.	.77
14	Students presently have sufficient orientation to the possibilities in the world of work to make sound career decisions.	.59
	Factor III. Career Development Alpha Consistency Reliability .79	
7	The world of work should be an organizing center for the curriculum.	.68
2	The focus of the academic disciplines should be related to the career plans of each student.	.62
3	School curricula should be oriented to relate to career development.	.58
12	The school curriculum should be related to the career goals of the students.	.56
25	Educational systems should be concerned with the placement of some terminating students into entry-level jobs.	.36

Table 6. Career Education Information Inventory (Continued)

Item		Loading
	Factor IV. Program Planning Alpha Consistency Reliability .67	
9	Consideration should be given to the views of students in planning and evaluating career education programs.	.69
21	A major purpose of career education is to help young people discover their individual interests and abilities.	.43
13	The interests of parents should be considered in developing the school curriculum.	.39
8	Education should deal with people centered activities.	.35
	Factor V. Curriculum Integration Alpha Consistency Reliability .61	
5	Education about careers should be integrated into the regular curriculum.	.72
4	The community is an excellent resource to use in a career education program.	.64
1	Education should have positive implications for career development.	.35
	Factor VI. Career Education Methods Alpha Consistency Reliability .52	
6	Occupational role playing can be an effective way for students to learn about careers.	.62
22	Commercially developed career oriented games may be considered as resource materials in career education.	.41
23	Career Education should be concerned with helping each student develop a positive self-image.	.36

Table 6. Career Education Information Inventory (Continued)

Item		Loading
	Factor VII. Knowledge of Self and World of Work Alpha Consistency Reliability .72	
20	Students should be aware of the economic system and its implications for employment.	.90
24	Experiences in career education should allow students to evaluate their interests and abilities.	.74
19	For students to make realistic occupational decisions, they should have an opportunity to compare their abilities, interests and needs with the requirements of various types of occupations.	.49
11	Students should be knowledgeable about the world of work before leaving school.	.40
	Factor VIII. Practical Experience Alpha Consistency Reliability .62	
16	"Hands-on" experiences are essential to a good career education program.	.73
15	A career education program should involve real life experiences.	.63
27	It is important to involve parents in planning career education programs.	.39

coefficient over 16 weeks of testing.) These results made the affective test adequate for research purposes. Appendix B contains the affective scale with instructions indicating the directionality for scoring each item.

2. Descriptive Statistics and Affective Pretest Data

This section will discuss the measures of central tendency and variability of the pre-test affective scores. It will also examine factors that might bias the nature of these scores. The maximum score for the 29 item test was 145. Of the 79 persons who took the affective test, the mean score was 122.98; the standard deviation was 8.68, and the scores ranged from 95 to 140. The histogram presented in Table 7 demonstrates a fairly normal distribution of scores. The researchers were very pleased with the result because the variability of the response scores will obviously help to explain future responses to the affective test.

Table 7. Histogram of Affective Score

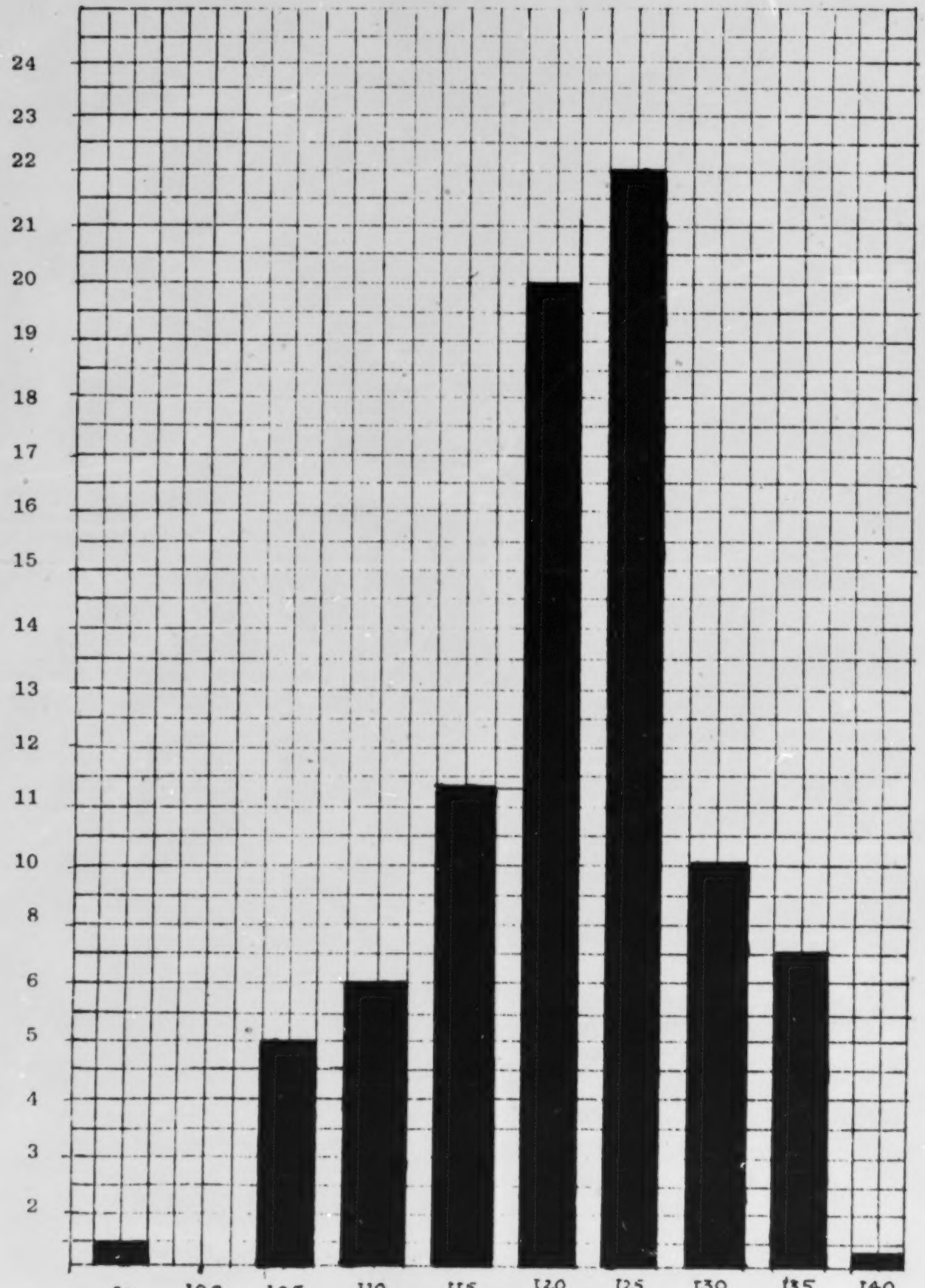


Table 8. Mean Scores of Affective Test by Town, Structure and Sex

Town	Urban	Upper Suburban	Rural	Lower Suburban
Mean	123.10	121.23	123.53	124.09
n	19	21	17	22
Structure		High		Low
Mean		122.29		123.78
n		36		35
Sex		Male		Female
Mean		123.63		122.77
n		19		60

Table 8 displays the mean score on the affective pretest by school system, curriculum structure, and sex. An analyses of variance was performed on these mean scores to see if the score differed systematically by school system, curriculum structure, or sex. If such differences existed, the results of our analyses could be biased. However, the analyses of variance revealed non-significant F ratios. Therefore, the researchers concluded that no bias existed in the pre-treatment affective levels on respondents due to school system, curriculum structure, or sex differences.

E. Data Analysis

1. Design of Data Analyses

This section presents data which will answer the four summative evaluation questions relating to overall program impact, and the influence of instructional programs, personality variations, and the interaction of structure and personality variables on program effectiveness.

T-tests are presented to analyze differences in mean scores on the cognitive and affective tests between pretest and posttest levels, as well as the simple differences in gain scores between types of curriculum structures and levels of subject receptivity. Two-way analyses of variance were used to answer questions two, three, and four in both the cognitive and affective domains. Such a technique allowed us to reassess more directly the personality variable (receptivity) and the instructional program variable (structure) as well as the interaction between them.

2. Overall Program Effectiveness

T-tests were performed on the cognitive and affective mean gain scores to see if differences in pre- and post-cognitive and affective tests existed. Table 9 shows that highly significant gain scores were

Table 9. Cognitive and Affective Gain Scores

Cognitive	Pre	Post	Difference	t Significance
50	26.06	29.68	3.62	p <.001
Affective				
51	122.64	125.88	3.24	p < .001

found in the pre and posttests. Therefore, the researchers' concluded with confidence that the overall effect of the training program was positive in both the affective and cognitive domains.

3. Differentiated Treatment and Program Effectiveness

The researchers addressed the question of whether there was differences in cognitive and affective gain scores between low-structured (teacher and student-centered environment) and high-structured groups (teacher-centered environment). The result of the t-test displayed in Table 10 shows that there was no significant difference in gain scores between these groups.

Table 10. Cognitive and Affective Gain Scores by Structure

	n	Pre	Post	Difference	t Significance
Cognitive					
Low	23	24.48	28.78	4.30	
High	27	27.41	30.44	3.04	1.04 NS
Affective					
Low	24	124.04	127.67	3.63	0.43 NS
High	27	121.41	124.30	2.89	

4. Receptivity and Program Effectiveness

The researchers addressed the question of whether there was a difference in cognitive and affective gain scores for low receptive and high receptive trainees. Low receptive trainees were conceptually described as individuals who thought more concretely, preferred extrinsic rewards and normative feedback and were less involved with innovation and flexible teaching than high receptive teachers. High receptive teachers were depicted as more abstract thinkers, preferring intrinsic reward and self-defined feedback, and more involved with innovation and flexible teaching. Hunt's conceptual level theory led us to expect that, as in the

the case of structure, receptivity by itself was not an expected finding. As with the analyses of gain scores by levels of curriculum structure, no significant difference was found in either domain between high and low receptive subjects. This finding and the results of the previous analyses were consistent with the hypotheses that gains are a function of the interactions between personality variables and program structures, not simply a function of structure or personality alone.

Table 11. Cognitive and Affective Gain Scores by Receptivity of Trainees

	Receptivity	N	Pre	Post	Difference	t Significance
Cognitive	Low	29	25.90	29.24	3.84	-.53 NS
	High	31	25.29	30.29	4.00	
Affective	Low	30	121.96	125.50	3.53	.39 NS
	High	21	123.63	126.43	2.81	

5. The Interaction of Differentiated Programs and Trainee Characteristics and Program Effectiveness

The researchers hypothesized that gains in both the cognitive and affective domains were determined by the interaction of receptivity and structure. The greatest gains are supposed to occur among matched subjects. (Either those subjects classified as highly receptive in a less structured environment or low receptive individuals in a more highly structured environment.) The researchers therefore, examined the affective and cognitive gain scores by matched and mismatched trainees and performed an analyses of variance to determine whether there was an interaction between receptivity and structure variables.

The interaction took on a different direction in the cognitive and affective measures. Matched subjects showed greater gains in the affective domain than did mismatched subjects, see Table 12. Subjects with high levels of receptivity showed greater attitudinal gains in low structured settings than did their counterparts with lower levels of receptivity. The converse was also true: subjects with low levels of receptivity displayed greater attitudinal gains in high structured settings than did their classmates with higher levels of receptivity. The interaction term of analyses of variance (Table 13) showed a clear tendency in the hypothesized direction which fell somewhat short of significance ($p =< .11$). The researchers felt that the data were consistent with Hunt's theory. Individuals whose personality needs were matched to the program environment had more positive feelings toward the subject matter than those who were mismatched.

The interaction which occurred in the cognitive gain scores was of a different direction than the affective gain scores. Table 14 reveals that the low receptive subjects gained more in a low structured group than did their low receptive counterparts in a more structured

Table 12. Affective Test Scores by Matched and Mismatched Trainees

Receptivity + Structure	n	Pre-Test	Post-Test	Gain
A. Match Low Receptive High Structure	14	119.29	124.36	5.07
High Receptive Low Structure	8	123.50	130.00	6.50
B. Mismatch Low Receptive Low Structure	16	124.31	126.50	2.19
High Receptive High Structure	13	123.69	124.23	.54

Table 13. Analyses of Variance of Affective Gain Scores by Receptivity and Structure

Source of Variation	Sum of Square	D.F.	Mean Sq.	F	Significance of F
Main Effects					
Receptivity	8.71	1	8.71	.11	.78
Structure	11.09	1	11.09	.14	.71
Interactions					
Receptivity + Structure	209.15	1	209.15	2.72	.11
Residual	3543.75	46	77.04		
TOTAL	3775.77	49	77.06		

Table 14. Cognitive Test Scores by Matched and Mismatched Trainees

Receptivity + Structure	n	Pretest	Posttest	Gain
A. Match				
Low Receptive High Structure	14	27.57	29.43	1.86
High Receptive Low Structure	8	24.78	28.25	3.50
B. Mismatch				
Low Receptive Low Structure	15	24.33	29.07	4.73
High Receptive High Structure	13	27.23	31.54	4.31

environment. This differential gain was due to the fact that the low receptive subjects assigned to the low structured groups began treatment with lower scores and ended treatment at essentially the same level as the other groups. The analysis of variance (Table 15) showed that the interaction between receptivity and structure again fell somewhat short of significance ($p = <.15$). In any event, this interaction effect was

Table 15. Analyses of Variance of Cognitive Gain Scores by Receptivity and Structure

Source of Variation	Sum of Squares	D.F.	Mean Sq.	F	Significance of F
Main Effect					
Receptivity	8.503	1	8.503	.47	.49
Structure	23.22	1	23.22	1.28	.26
Interaction					
Receptivity + Structure	39.91	1	39.91	2.20	.15
Residual	835.41	46	18.16		
TOTAL	903.78	49	18.47		

in the reverse direction than hypothesized. Mismatched persons gained more than matched persons. The .15 significance level stemmed from the fact that while mismatched subjects (i.e., high receptive subjects in high structured settings ($\bar{x}$ 1.86)) and low receptive subjects in low structured settings ($\bar{x}$ 4.73)) displayed similar cognitive gains, the same is not true of their matched counterparts, Low receptive subjects matched to high structured settings gained less ($\bar{x}$ 1.86) than high receptive subjects matched to low structured settings ($\bar{x}$ 3.50). This finding failed to substantiate the hypothesized interaction effect in the cognitive domain.

F. Conclusions

The summative evaluation measured the effectiveness of training 80 teachers in the concepts and methodologies of career education by addressing four issues of program effectiveness. The researchers found that overall, the program was effective because of significant gain scores on cognitive and affective measures. As anticipated, the researchers found no relationship between cognitive and affective gain scores and the program variable (structure), and personality variable (receptivity). The inservice training project was based upon the assumption that teachers vary in their learning styles and, when taught in a program that matched their personality, the achievement of the training program's objectives would be maximized. This hypothesis was validated in the affective but not in the cognitive domain.

An examination of the cognitive and affective instruments revealed that the affective instrument was more valid for research purposes than the cognitive measure. Although the cognitive instrument was an excellent teacher-made test, criterion-referenced to the goals of the

training session, it had minimally acceptable reliability. The test needs to be revised to be used again for research purposes. Such a revision might add to the clarity and significance of the interaction effect in the cognitive domain.

Clearly, further replication of this study needs to be done. In future studies, the number of trainees need to be increased to enable researchers to control statistically for other factors.

CHAPTER V

FORMATIVE EVALUATION: A STUDY OF PROGRAM IMPLEMENTATION

A. Introduction

The purpose of this phase of the research was to monitor the implementation of the program. Since the training program was designed to achieve specific outcomes which we theorized are the results of interaction between student characteristics and treatment variables, then it is essential that the treatment be monitored to assess the extent of implementation. We wanted to be sure that the treatments related to enhancing the outcomes which actually occurred in the two instructional sessions.

The monitoring program called for measuring students' and teachers' reactions to the treatments and reporting the extent to which weekly sessions in the manual were actually completed.

Students and teachers were asked to respond to three instruments each week following the instructional session. These data was then sent to Boston University for analysis by the directors of the program, and a team of researchers. Teachers were advised on their progress upon request, or if the situation required intervention by the university team. Otherwise, the data was stored for further study following the implementation of the program. No attempt was made to intervene in the instructional program to standardize the practices of teachers, though it was our hope that they would follow the instructions in the manual and to use the other resources provided.

In reporting the formative data we have organized the findings so that the reader can compare student and teacher reactions and program implementation continuously through considerations of overall results, high- and low-structured groups, locations, locations (high- and low-structured groups) and matched-mismatched groups.

These treatment variables provide a profile of the implementation behavior as it related to contextual factors - kind of treatment, location (instructor), the combination of kind of treatment and location, and whether the kind of treatment was matched or mismatched to the student characteristics.

Organizing implementation data this way provides a rather comprehensive view of participants' attitudes, and understanding of what occurred during the period of study.

In the following sections we will describe the instruments themselves, data collection procedures, and the findings. The final section on conclusions and implications attempts to integrate the findings on implementation with the effectiveness of the program and receptivity. Together these aspects of instruction present a dynamic picture of in-service career education with all its complexities.

Figure 1. Student Reaction Form

PROJECT FOCUS

SESSION REACTION FORM

Circle the one word that most clearly describes your feeling about this session.

1.	amused	20.	glad
2.	angry	21.	helpless
3.	annoyed	22.	indifferent
4.	anticipatory	23.	indignant
5.	apprehensive	24.	inquisitive
6.	bored	25.	interested
7.	calm	26.	involved
8.	complacent	27.	joyful
9.	concerned	28.	liberated
10.	content	29.	lonely
11.	depressed	30.	meditative
12.	despairing	31.	neutral
13.	detached	32.	satisfied
14.	disappointed	33.	serene
15.	disturbed	34.	somber
16.	ecstatic	35.	still
17.	elated	36.	terrified
18.	exasperated	37.	tranquil
19.	excited	38.	uneasy

Check the location of your class.

____Barnstable ____Boston ____Brookline ____Stoughton

Check the time for your class meeting.

____ 4to 6 p.m. ____ 7 to 9 p.m.

Today's Date_____ Your Social Security No._____

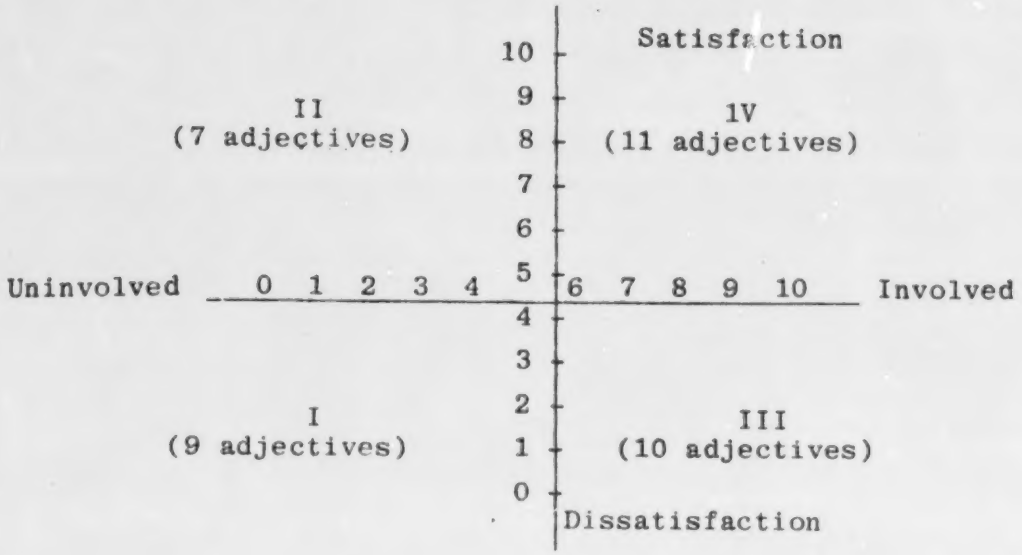
Figure 2. Scale for Adjectives on Student Reaction Forms

SCALE FOR ADJECTIVES

Adj. No.	Involvement[1]	Satisfaction[1]	Adj. No.	Involvement[1]	Satisfaction[1]
1	6	7	20	7	7
2	9	1	21	3	1
3	7	3	22	1	3
4	8	6	23	9	2
5	7	2	24	7	6
6	0	3	25	6	6
7	4	6	26	9	7
8	2	4	27	9	9
9	6	4	28	2	9
10	4	6	29	2	1
11	1	1	30	2	6
12	9	0	31	5	5
13	1	4	32	6	7
14	6	2	33	2	8
15	6	2	34	3	2
16	10	10	35	1	6
17	10	9	36	10	0
18	8	2	37	3	7
19	8	8	38	4	3

[1]For purposes of this evaluation, the elation-depression dimension (Willis and Allen, 1978:52-58) was treated as a satisfaction-dissatisfaction dimension, while the involvement-uninvolvement dimension was retained. (Reference - Willis, George (Editor) Qualification Evaluation: Concepts and Cases in Curriculum Criticism. Berkeley: McCutchan Publishing Corporation, 1978.)

Figure 3. Patterning Quadrants for Organizing Student Reactions



B. Measurement Procedures and Instruments

1. Student Reactions

In order to monitor student involvement and satisfaction, they were required to respond to a list of 38 adjectives, Figure 1, following each session. Each was asked to select a single adjective that best describes his/her reaction to the instructional session. When these statement reactions were analyzed each week, they were grouped according to four quadrants, (see Figure 3) and tabulated. Sums, means, and standard deviations were computed for each instructional session (eight sessions each week). This information is summarized on the following pages.

The instrument for collecting data on student involvement and satisfaction is a modification of the Willis and Allan, 1978, form. The relation and depression/dimensions was treated as a satisfaction/dissatisfaction, while the involvement/uninvolvement dimension was retained. The two dimensions are descriptions of the psychological/instinctual reactions of respondents to particular stimuli or events.

The 38 adjectives used in this program are listed in Figure 1. The rating scale for these adjectives is tabulated in Figure 2. Each of the 38 adjectives had a rating on both involvement and satisfaction, e.g., content (adjective #10) had a rating of 4 on the involvement dimension and 6 on the satisfaction dimension; depression had a rating of 1 on involvement and on satisfaction; neutral had a rating of 5 on both dimensions, etc. Each adjective can be located in one of four quadrants. Figure 3 illustrates the involved-uninvolved and satisfaction-dissatisfaction dimensions, as well as the four quadrants. Nine adjectives fell into quadrant I (uninvolved/dissatisfied), seven adjectives were in quadrant II (uninvolved/satisfied), quadrant III (involved/dissatisfied) had ten adjectives, while there were 11 adjectives in quadrant IV (involved/satisfied). One adjective was neutral. Thus, an individual selecting an adjective that fell into quadrant II would indicate a degree of feeling not involved, yet indicating a degree of satisfaction; while an adjective in quadrant IV would indicate a degree of involvement and satisfaction. From the scaling, the higher the scores on each dimension, the greater the involvement and the greater the satisfaction. As indicated in Figure 3, the scale values for each dimension ranged from 0 to 10.

2. Teacher Reaction

The Instructor's Assessment Form provided weekly feedback on the adequacy of the program guide and resources in the manual. Figure 4 illustrates the Instructor Assessment Form. The teachers were required to complete the form at the end of each session for each group (high- and low-structure). The assessment form was scaled from 5 for excellent/extraordinarily well, down to 1 for very dissatisfied/very poorly. Thus, teachers were able to indicate their feelings towards the session with regards to satisfaction and adequacy on a scale of 1 to 5.

The completed forms were tabulated (scaled) and totaled. A mean value was computed for structure and session. The mean values which

Figure 4. Instructor Assessment Form

INSTRUCTOR ASSESSMENT FORM

Name _____ Location _____

Session Date _____ Session Title _____

Time _____ No. of Students _____ Structure (high or low) _____

	Very Dissatisfied	Dissatisfied	Neutral	Good	Excelle
1. What was your general reaction to this session?	___	___	___	___	___
2. What do you think was the student's general reaction to this session?	___	___	___	___	___

	Very Poorly	Poorly	Adequately	Well	Extraordinar Well
3. How well did the instructional guide and resources provide what you needed for the session?	___	___	___	___	___
A. How well did the directions provide the information you needed?	___	___	___	___	___
B. How adequately did the resources provide the information needed?	___	___	___	___	___
C. Were the time allocations appropriate?	___	___	___	___	___
D. How well did the session flow from activity to activity?	___	___	___	___	___
E. Did the activity provide for appropriate student participation?	___	___	___	___	___
F. How well did the activities contribute to the achievement of the session objectives?	___	___	___	___	___
G. How well were the course session objectives achieved?	___	___	___	___	___

4. Specific suggestions or recommendations for improving this session.

_____

_____

Figure 5. Example of Clinical Assessment Form for Monitoring Treatment

Session: 4-6 pm/7-9 pm
Instructor: Patricia Duffy
Date: 3/21/79

SESSION 7
ROLE PLAYING TECHNIQUES IN CAREER EDUCATION

LOW STRUCTURE

TEACHING ANALYSIS GUIDE

	Yes	To Some Extent	No	Not Applicable
Phase One				
1. Did the teacher distribute the role playing handouts to members of the group?	X	___	___	___
2. Did the teacher direct their attention to the use of role playing, the educational value, and the steps in role playing activities?	X	___	___	___
3. Did the group read the materials?	X	___	___	___
Phase Two				
4. Did the teacher form 3-4 small groups?	X	___	___	___
5. Did the small groups conduct independent role playing sessions using the activity cards?	X	___	___	___
6. Did the small groups discuss their experiences?	X	___	___	___
Phase Three				
7. Did the groups design and write a career education related role playing activity?	As a home assignment			___
8. Did the groups share their activity with other groups?	X	___	___	___

were rounded off the nearest tenth (0.1) of a unit, were also converted into percentages by dividing by 5 and multiplying by 100 (or simply by multiplying a factor of 20). Because of the rounding off and small scale, percentages are subject to an error of plus or minus ( ) 2%. Mean values and percentages are summarized in subsequent tables of this chapter.

3. Program Implementation

Figure 5 illustrates the Teaching Analysis Guide. This form, whose content changed from session to session, was used as a tool for measuring program implementation. The teachers were required to complete the form at the end of each session for each group (high- and low-structure). The form was scaled on the basis of 2 for yes, 1 for to some extent, and 0 for no. Items assessed as not applicable were eliminated. Thus, the teachers were able to indicate the dgree of implementation of the program for each session on a scale of 0 to 2.

The completed forms were tabulated (scaled) and totaled. A mean score was computed for each structure and session. These mean scores, which were rounded off to the nearest tenth (0.1) of a unit, were also converted to percentages by dividing by 2 and multiplying by 100 (or simply by multiplying by 50). Because of the rounding off, and the small scale, percentages are subject to a plus or minus (±) 5 percent error. Mean values and percentages are summarized in subsequent tables of this chapter.

C. Collection of Data

Sessions were held once a week at each location. At the end of each session, each student completed a student reaction (session reaction) form and turned it over to the teacher. Each teacher in turn, completed the instructor assessment form and the teaching guide for each structure. The teacher mailed the three sets of instruments to the project staff at Boston University. Staff members then scaled, posted, and tabulated the data. Mean scores, standard deviation, and percentages were computed and posted.

This was a field test program. This program was not different from other such programs in that a complete set of data was not collected. Students were absent on occasions for a variety of reasons, including foul weather (snow storms). One session was not held at one location because of the weather. For unknown reasons some instruments were not received by the Boston University staff.

D. Organization and Presentation of Data

Student Reactions

Student reactions data are presented in both graphical form (labeled as figures) and tabular form (labeled as tables). The data are organized on several levels.

1. Overall Results: Mean scores were computed for the entire program on a session by session basis for the involvement and satisfaction constructs, as well as an overall mean score for each of the two constructs with standard deviations. Q score (quadrant values - I, II, III, or IV) were also computed for each session as well as the overall program. The data are depicted on the appropriate chart and graph.

2. High and Low-Structure Groups: Mean scores for all participants in high-structure groups regardless of location were computed on a session by session basis for involvement and satisfaction, as well as overall mean score for the entire program with standard deviation for each of the two constructs. The same procedure was repeated for the low-structure groups. Q values were also computed. These data are depicted on appropriate charts and graphs.

3. Location: Mean scores were computed for the combined low and high-structure groups on a session by session basis for each location for involvement and satisfaction. An overall mean value was also computed for each of the two constructs along with standard deviations. These data are displayed on appropriate graphs and tables.

4. Location (High- and Low-Structure Groups): Mean scores were computed for each high and low-structure group on a session by session basis for each location for involvement and satisfaction. An overall mean score and standard deviation was computed for each category for each of the two constructs. Q scores were also computed. These data are displayed on appropriate graphs and tables.

5. Matched-Mismatched Groups: Mean scores were computed for all matched students and all mismatched students, regardless of location, on a session by session basis for each of the two constructs. An overall mean score and standard deviation was also computed for each category. Q scores were also computed.

Mean scores were also computed for each matched and mismatched group on a session by session basis for each location for each of the two constructs. An overall mean and standard deviation was also computed for each category. Q values were also computed. These data are displayed on appropriate figures and tables.

Teacher Reaction

The teacher reaction data are presented only in tabular form. Mean scores percentage data are presented for:

1. The overall program
2. High structure (group) - all locations combined)

3. Low structure (group) - all locations (combined)
4. High + low-structure groups - by location
5. High-structure (group) - by location
6. Low-structure group - by location

No data are presented for matched or mismatched groups. This type of data was not collected.

Program Implementation

The program implementation data are presented only in tabular form. Mean scores and percentages are presented for:

1. The overall program
2. High-structure group - all locations (combined)
3. Low-structure group - all locations (combined)
4. High + low-structure (groups) - by location
5. High-structure group - by location
6. Low-structure group - by location

Data are not presented for matched or mismatched group. This type of data was not collected.

E. Findings

1. Overall Results

The students appeared to be more psychologically involved with the program than they were psychologically satisfied. With only one minor exception, overall mean scores for each category were higher for involvement than satisfaction. However, overall mean scores for each of the two constructs exceeded 5.00 (the neutral value) for each category and thus fell into quadrant IV.

The overall mean score for teacher reactions was 3.7 (74%), which is considerably above the neutral point of 2.5. It is noted that mean scores for teacher reactions were generally higher for the sessions of the first half of the program than those of the last half.

The overall mean score for program implementation was 1.7 (86% implementation). Mean scores for program implementation were generally higher for the sessions of the first half of the program than those of the last half.

Student Reactions

Table 1 and Figure 6 summarize the mean scores for student reactions (involvement and satisfaction) for all locations. Total attendance ranged from a high of 70 students, session 2, to a low of 49 students for the 8th session. The mean attendance was 58 (57.5) students. The standard deviation of 6.22 indicated a considerable variation in attendance. The mean values for involvement ranged from a high of 6.90, session 11, to a low of 5.68 for session 4. The mean values for satisfaction ranged from

a high of 6.56, session 14, to a low of 5.64 for session 8. The overall mean value was 6.45 for involvement and 6.12 for satisfaction. Except for one incident - one mean value for the high-structured group at Brookline, mean values of 5.24 for involvement and 5.27 for satisfaction, (see Table 1) the overall mean values for each group in each category were higher for the construct involvement than the construct satisfaction. This will be illustrated in subsequent tables and figures in this chapter. There was a slightly larger variability in the mean values of the construct involvement than the construct satisfaction (standard deviation of 0.42 vs. 0.31).

Teacher Reactions

Tables 2 and 3 summarize the mean scores and percentages for teacher reactions for the overall program. The overall mean score of 3.71, or 74% indicates that the teachers were somewhat more than satisfied with the program. The mean scores for sessions ranged from a high of 4.3 or 86%, session 1; to a low of 3.1 or 62% for session 13. It is noted that the three highest mean scores were recorded for the first three sessions and the lowest mean scores were recorded near the end of the program.

Program Implementation

Tables 4 and 5 summarize the mean scores and percentages for the overall program implementation. The overall mean score was 1.7 or 85% implementation. This indicates that most of the program was implemented. The mean scores for the sessions ranged from a high of 2.0 or 100% to a low of 1.4 or 70% implementation. The mean scores and percent implementation were much higher for the first seven sessions than the later sessions of the program.

2. High- and Low-Structure Treatments

Student Reactions

High-Structure: The data in Table 6 and Figure 7, which are composits for all four locations, show that the student teachers in the high-structured environment were involved and satisfied throughout the program. The mean values were in quadrant IV throughout the program. For involvement, the highest mean value noted, 7.35, was for the first session, it then slowly declined in value, reaching its minimum value, 5.33, at the fourth session. Involvement fluctuated between these values for the remainder of the program, and ended at a relatively high value of 7.09. The overall mean value was 6.57. Satisfaction had less variability than involvement (standard deviation of 0.45 vs. 0.60) involvement. It reached its minimum value, 5.37, at the fourth session and its maximum value, 7.01 at the last session. The overall mean value for satisfaction was 6.13.

Low-Structure: Table 7 and Figure 8 depict the data for student reaction to the low-structure environment for all four locations. Both involvement and satisfaction had less variations than the high-structured environment. The mean values were in the IV quadrant for all sessions.

Table 1. Overall Results
Student Reactions

Mean Scores (All Participants)

Session	N	Mean		Quadrant
		I	S	
I	66	6.75	6.21	IV
II	70	6.64	6.06	IV
III	62	6.84	6.34	IV
IV	61	5.68	5.78	IV
V	63	6.74	6.41	IV
VI	57	6.82	6.51	IV
VII	59	6.65	6.39	IV
VIII	49	5.79	5.64	IV
IX	53	6.57	6.18	IV
X	51	6.46	6.19	IV
XI	56	6.90	5.79	IV
XII	52	6.12	5.91	IV
XIII	54	5.82	5.66	IV
XIV	52	6.54	6.56	IV
Mean	57.5	6.45	6.12	IV
SD	6.22	0.42	0.31	

N = Number of Students
I = Involvement
S = Satisfaction

Figure 6.
Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

All Participants
(N=80)

Key
I = Involvement
S = Satisfaction

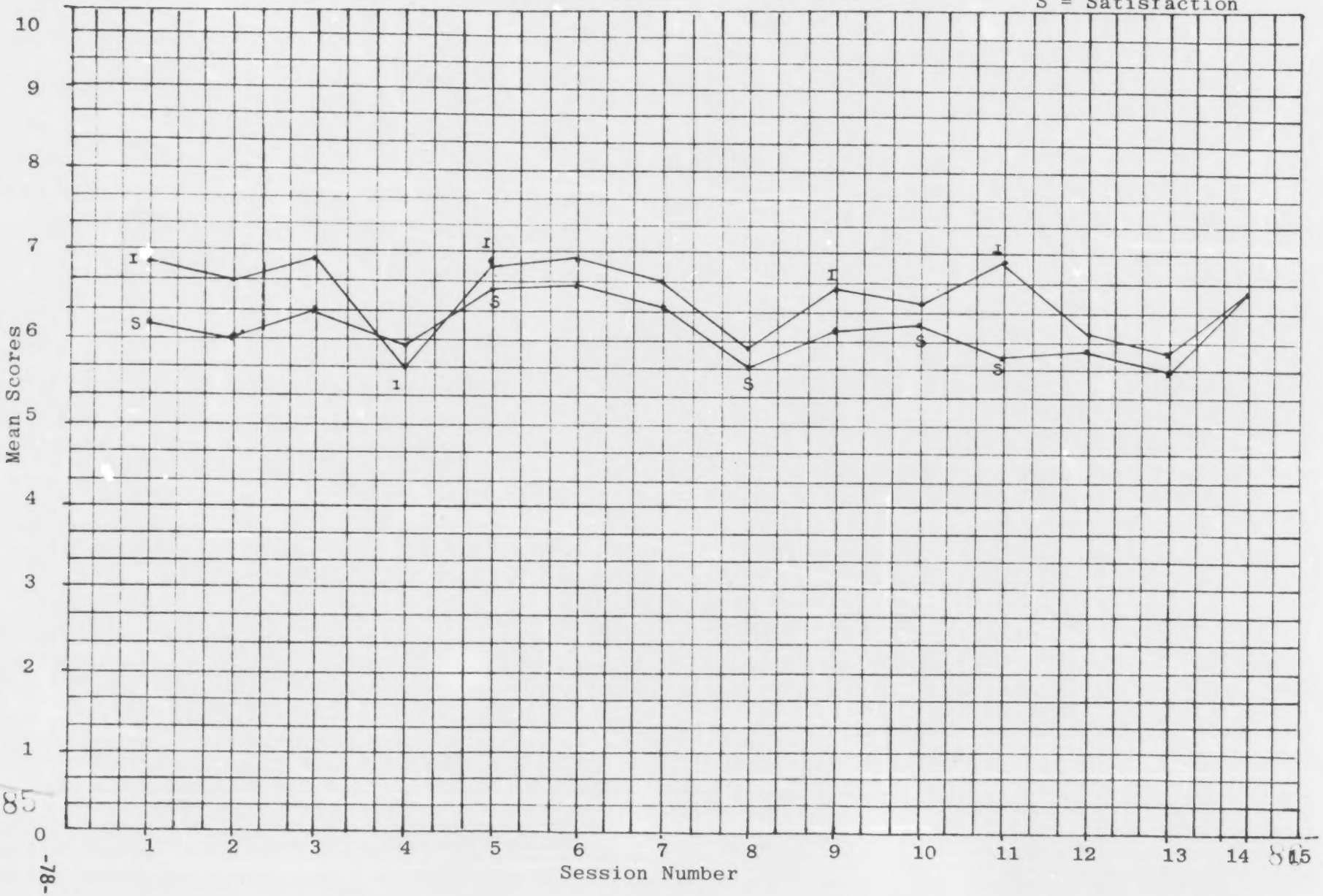


Table 2. Teacher Reactions (Mean Scores)
Overall and by Location

Scale: 1 to 5
1 = Very Poor of Very Dissatisfied
2 = Extraordinarily Well or Excellent

Because of the rounding off of values to the nearest tenth (0.1) of a unit and the small scale, the percentages are subject to an error ± 2 percent.

	Location	Session														Sum	Aver.	Percent
		1	2	3	4	5	6	7	8	9	10	11	12	13	14			
High Structure	Brklne.	4.6	5.0	5.0	4.2	4.2	4.2	4.0	3.6	3.7	3.9	3.9	3.7	2.9	3.7	56.6	4.0	80
	Boston	4.6	4.3	3.6	3.0	3.4	3.4	3.4	--	3.8	3.9	3.9	3.3	3.3	4.4	48.3	3.7	74
	Bnstble.	4.2	4.3	3.5	3.2	4.0	3.5	4.0	3.6	3.5	4.0	4.0	--	--	--	41.8	3.8	76
	Stghtn.	4.6	4.6	4.4	3.5	2.8	4.1	3.0	4.0	3.8	2.9	2.9	2.9	2.9	3.0	49.2	3.5	70
	Sum	18.0	18.2	16.5	13.9	14.4	15.2	14.4	11.2	14.8	14.7	14.7	9.9	9.1	11.1	195.9	15.0	--
	Avg.- All loc.	4.5	4.6	4.1	3.5	3.6	3.8	3.6	3.7	3.7	3.7	3.7	3.3	3.0	3.7	52.5	3.8	75
	Perctge. All loc.	90	92	82	70	72	76	72	74	74	74	74	66	60	74	1050	76	--
Low Structure	Brklne.	3.5	3.9	4.3	4.3	4.1	4.2	4.1	3.9	3.9	4.0	4.0	3.9	3.1	4.0	55.2	3.9	78
	Boston	4.3	4.1	3.8	3.8	3.6	3.6	3.0	--	3.9	3.8	3.8	3.2	3.2	4.4	48.5	3.7	74
	Bnstble.	4.2	4.2	3.7	2.7	3.3	4.0	3.0	--	2.9	4.0	3.9	--	--	--	35.9	3.6	72
	Stghtn.	4.3	2.8	4.3	2.4	2.8	3.9	2.8	4.0	3.3	2.8	2.8	2.9	2.9	3.0	45.0	3.2	64
	Sum	16.3	15.0	16.1	13.2	13.8	15.7	12.9	7.9	14.0	14.8	14.5	10.0	9.2	11.4	184.6	14.4	288
	Avg. All loc.	4.1	3.8	4.0	3.3	3.5	3.9	3.2	4.0	3.5	3.7	3.6	3.3	3.1	3.8	46.2	3.6	74
	Perctge. All loc.	82	76	80	66	70	78	64	80	70	74	72	66	62	76	1016	73	--
Hi. &Lo	Avg.	4.3	4.2	4.1	3.4	3.6	3.9	3.4	3.9	3.6	3.7	3.7	3.3	3.1	3.8	52.0	3.7	74
	Perctge.	86	84	82	68	72	78	64	80	70	74	72	66	62	76	1040	74	--

Table 3. Teacher Reaction (Mean Scores Expressed as Percentages)

Because of the rounding off of values to the nearest tenth (0.1) of a unit and the small scale, the percentages are subject to an error of ±2 percent

	Location	Session													Sum	Aver.	Percent (Average)
		1	2	3	4	5	6	7	8	9	10	11	12	13	14			
High	Brookline	92	100	100	84	84	84	80	72	74	78	78	74	58	74			80
	Boston	92	86	72	60	68	68	68	--	76	78	78	66	66	88			74
	Barnstable	84	86	70	64	80	70	40	72	70	80	80	--	--	--			76
	Stoughton	92	92	88	70	56	82	60	80	76	58	58	58	58	60			70
	Average (All Loc)	90	92	82	70	72	76	72	74	74	74	74	66	60	74			75
Low	Brookline	70	78	86	86	82	84	32	78	78	80	80	78	62	80			78
	Boston	86	82	76	76	72	72	60	--	78	76	76	64	64	88			74
	Barnstable	84	84	74	54	66	80	60	--	58	80	78	--	--	--			72
	Stoughton	86	56	86	48	56	78	56	80	66	56	56	58	58	60			64
	Average (All Loc)	82	76	80	66	70	78	64	80	70	74	72	66	60	76			73
High & Low (Overall)	Average (All Loc)	86	84	82	68	72	78	68	78	72	74	74	66	62	76			74

89

90

Table 4. Program Implementation (Mean Scores)
All Locations

Scale: 0 to 2
0 = Not Implemented
1 = Partially Implemented
2 = Completely Implemented

Because of the rounding off of values to the nearest tenth (0.1) of a unit and the small scale, the percentages are subject to an error of --5 percent

	Location	Session														Sum	Aver.	Percent
		1	2	3	4	5	6	7	8	9	10	11	12	13	14			
High	Brookline	1.8	2.0	1.6	1.6	2.0	2.0	2.0	1.9	2.0	-	-	-	-	-	16.9	1.9	95
	Boston	2.0	1.8	2.0	1.1	1.8	1.8	1.6	1.6	1.8	1.5	1.5	1.6	1.6	-	21.7	1.7	85
	Barnstable	2.0	1.9	1.7	-	1.4	1.4	1.6	2.0	1.2	1.5	1.5	1.7	1.7	-	19.6	1.6	80
	Stoughton	1.5	2.0	-	-	2.0	2.0	2.0	2.0	1.3	1.3	0.9	0.9	-	-	15.9	1.6	80
	Sum	7.3	7.7	5.3	2.7	7.2	7.2	7.2	7.5	6.3	4.3	3.9	4.2	3.3	-	74.1	5.7	-
	Average (All Loc)	1.8	1.9	1.8	1.4	1.8	1.8	1.8	1.9	1.6	1.4	1.3	1.4	1.7	-	21.6	1.7	85
	Percentage (All Loc)	90	95	90	70	90	90	90	95	80	70	65	70	85	-	1080	83	-
Low	Brookline	1.5	1.9	1.6	2.0	2.0	2.0	2.0	2.0	1.6	-	-	-	-	-	16.6	1.8	90
	Boston	1.9	1.9	2.0	1.9	1.9	1.9	1.6	0.6	1.6	1.7	1.7	1.3	1.3	-	21.3	1.6	80
	Barnstable	2.0	2.0	-	-	1.5	1.5	2.0	-	1.4	1.6	1.6	1.7	1.7	-	17.0	1.5	75
	Stoughton	2.0	2.0	-	-	2.0	2.0	2.0	2.0	1.3	1.3	0.9	0.9	-	-	16.4	1.6	80
	Sum	7.4	7.8	3.6	3.9	7.4	7.4	7.6	4.6	5.9	4.6	4.2	3.9	3.0	-	71.3	5.5	-
	Average (All Loc)	1.9	2.0	1.8	2.0	1.9	1.9	1.9	1.5	1.5	1.5	1.4	1.3	1.5	-	22.5	1.7	81
	Percentage (All Loc)	95	100	90	100	95	95	95	75	75	75	70	65	75	-	1105	85	-
High & Low (Overall)	Average (All Loc)	1.9	2.0	1.8	1.7	1.9	1.9	1.9	1.7	1.6	1.5	1.4	1.4	1.6	-	22.3	1.7	85
	Percentage (All Loc)	95	100	90	85	95	95	95	85	80	75	70	70	80	-	1115	86	-

Table 5. Procedure Implementation (Mean Scores Expressed as Percentages)

All Locations

Because of the rounding off of values to the nearest tenth (0.1) of a unit and the small scale, the percentages are subject to an error of ±5 percent

	Location	Session													Sum	Aver.	Percent (Average)
		1	2	3	4	5	6	7	8	9	10	11	12	13	14			
High	Brookline	90	100	80	80	100	100	100	95	100	-	-	-	-	-			95
	Boston	100	90	100	55	90	90	80	80	90	75	75	80	80	-			85
	Barnstable	100	95	85	-	70	70	80	100	60	75	75	85	85	-			80
	Stoughton	75	100	-	-	100	100	100	100	65	65	45	45	-	-			80
	Average	90	95	90	70	90	90	90	95	80	70	65	70	85	-			83
Low	Brookline	75	95	80	100	100	100	100	100	80	-	-	-	-	-			90
	Boston	95	95	100	95	95	95	80	30	80	85	85	65	65	-			80
	Barnstable	100	100	-	-	75	75	100	-	70	80	80	85	85	-			75
	Stoughton	100	100	-	-	100	100	100	100	65	65	45	45	-	-			80
	Average	95	100	90	100	95	95	95	75	75	75	70	65	75	-			85
High and Low	Average	95	100	90	85	95	95	95	85	80	75	70	70	80	-			86

93

94

Table 6. Student Reactions

High-Structure (All Students)

Session	N	Mean		Quadrant
		I	S	
I	29	-7.35	6.50	IV
II	33	6.98	6.47	IV
III	30	6.63	6.17	IV
IV	28	5.33	5.37	IV
V	28	6.23	6.46	IV
VI	27	6.36	6.46	IV
VII	26	6.95	6.23	IV
VIII	22	5.74	5.75	IV
IX	33	7.04	6.10	IV
X	28	6.84	6.26	IV
XI	27	7.19	5.49	IV
XII	25	6.15	5.95	IV
XIII	27	6.05	5.66	IV
XIV	27	7.09	7.01	IV
Mean	27.86	6.57	6.13	IV
SD	2.88	0.60	0.45	

N = Number of Students
I = Involvement
S = Satisfaction

All Schools
High Structure Groups
(N=40)

Figure 7
Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

Key
I: Involvement
S: Satisfaction

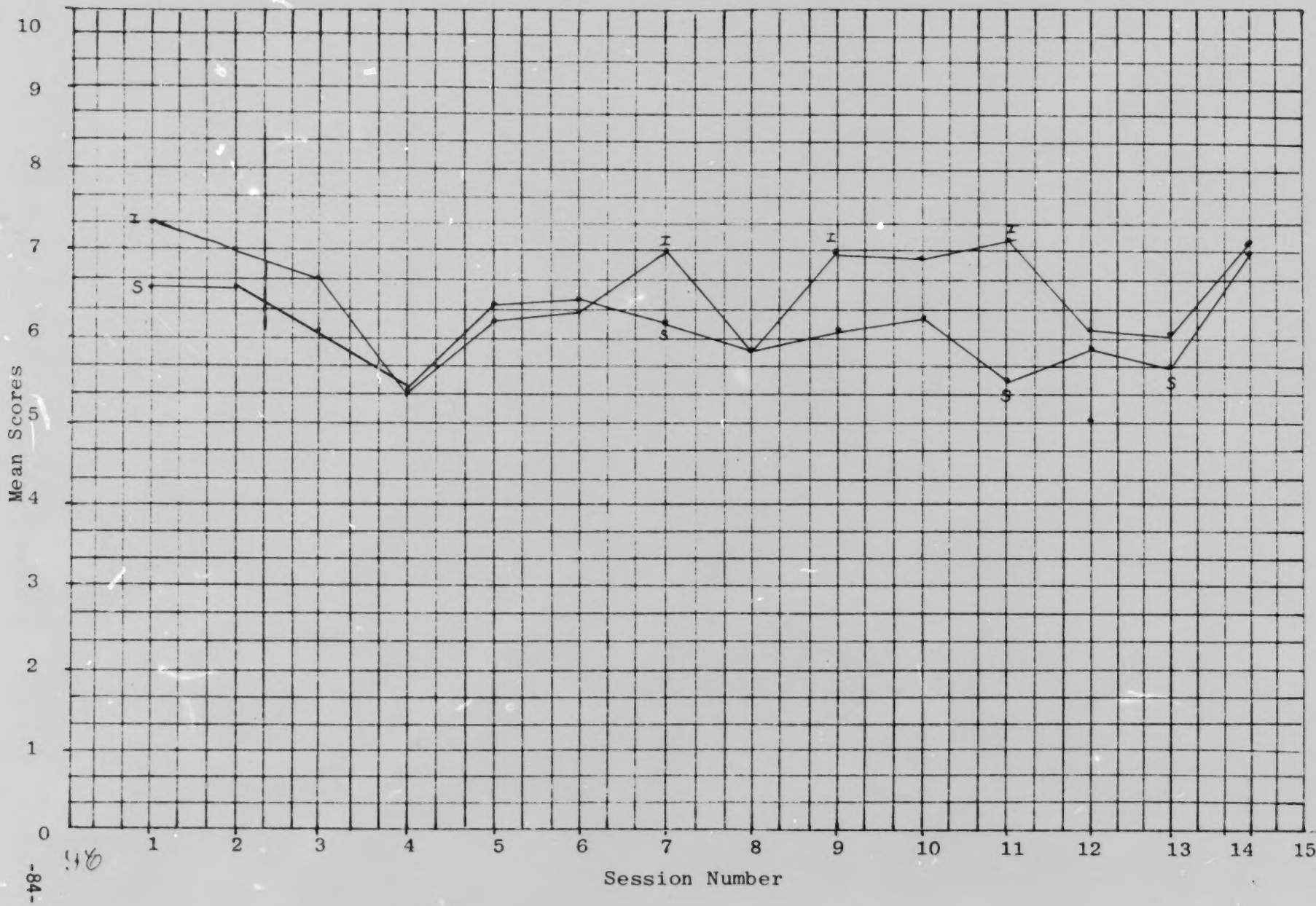


Table 7. Student Reactions

Low-Structure (All Students)

Session	N	Mean		Quadrant
		I	S	
I	37	6.15	5.92	IV
II	37	6.30	5.66	IV
III	29	7.04	6.50	IV
IV	33	6.06	6.06	IV
V	35	7.25	6.35	IV
VI	30	7.28	6.55	IV
VII	33	6.34	6.56	IV
VIII	27	5.83	5.53	IV
IX	26	6.10	6.25	IV
X	23	6.08	6.11	IV
XI	29	6.61	6.08	IV
XII	27	6.08	5.86	IV
XIII	27	5.69	5.65	IV
XIV	25	5.98	6.11	IV
Mean	29.86	6.34	6.16	IV
SD	0.50	0.51	0.31	

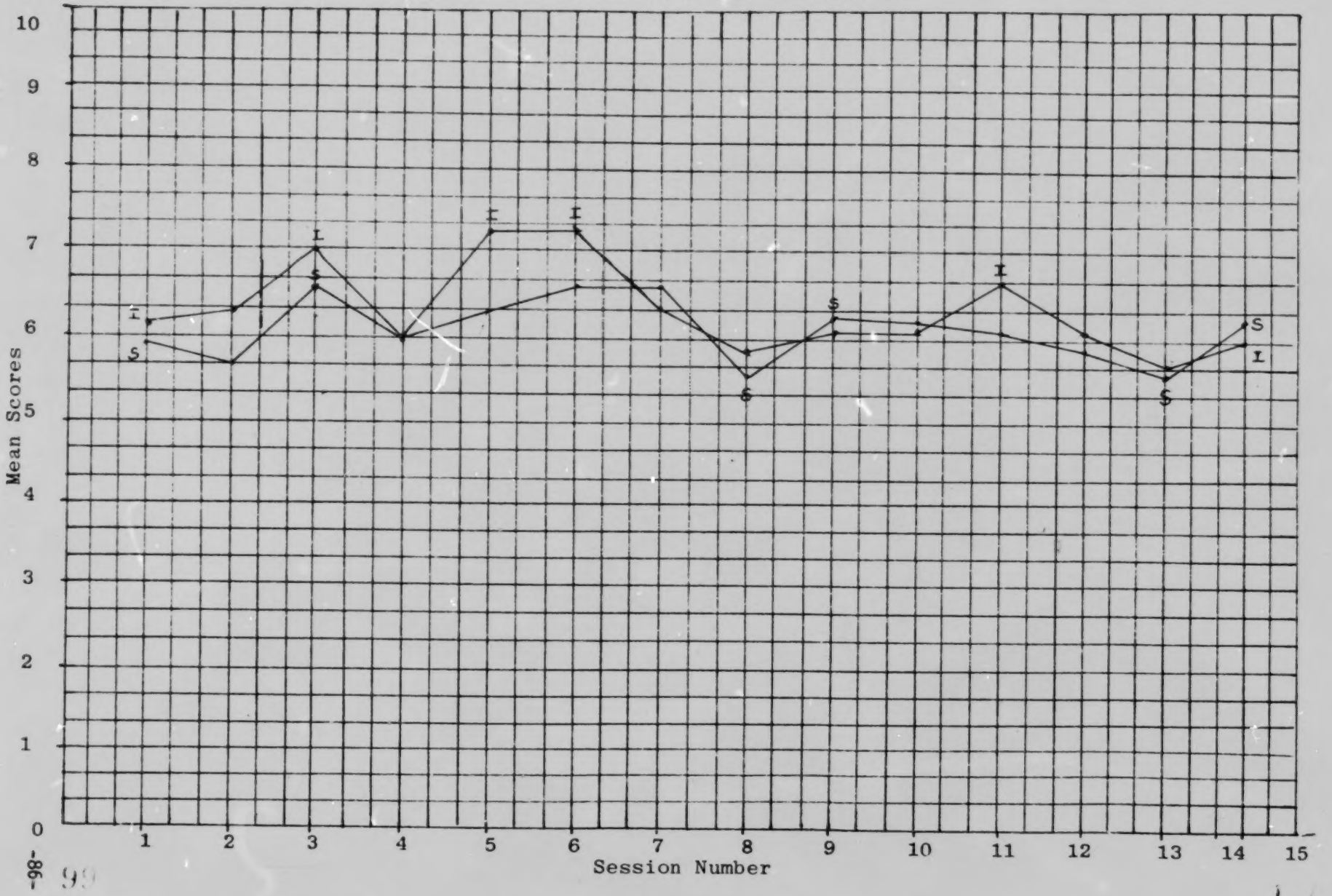
N = Number of Students
I = Involvement
S = Satisfaction

Figure 8

All Schools
Low Structure Groups
(N=40)

Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

Key
I: Involvement
S: Satisfaction



The maximum mean value for involvement, 7.28, was recorded for the sixth session, and the minimum mean value, 5.83, was recorded for the eighth session. The mean value for all sessions was 6.34 with a standard deviation of 0.51.

The maximum mean value for satisfaction, 6.56, occurred at the seventh session, and the minimum, 5.53, at the eighth session. The mean value for all sessions was 6.16 with a standard deviation of 0.31.

Teacher Reactions

High-Structure: Tables 2 and 3 display the teacher reaction data to the program. For the high-structured programs, the overall mean (on a scale of 1 to 5) for all locations was 3.75 of the order of very satisfactory. The highest mean values (4.5 and 4.6) occurred at the first and second sessions. Means values for all other sessions, except the third session (4.1), were between 3.0 and 3.9. This indicated that the teachers considered the program to be more than adequate, an overall satisfaction of 75%.

Low-Structure: The overall mean value for all locations was 3.61, slightly less than the mean for the high-structure. The maximum mean, 4.1, was recorded for the first session. The mean values for all other sessions were between 4.0 and 3.1.

This also indicates that the teachers considered the program more than adequate, an overall satisfaction of 74%.

Program Implementation

High Structure: Tables 4 and 5 depict the implementation data. The mean implementation value, 1.7, indicates that overall 85% of the high-structured program was implemented.

Low-Structure: The mean implementation value, 1.7, indicates that 85% of the low-structured program was implemented.

3. Location

Student Reactions

Brookline, Table 8 and Figure 9 depict the combined student reaction data for both the high and low-structured classes held at Brookline. The peak mean value for involvement, 8.08, was associated with the 7th session, while the minimum value, 5.07, was associated with the 4th session. The overall mean value for involvement was 6.18. The construct, satisfaction, had much less variability than involvement (standard deviation of 0.54 vs. 0.82). The maximum mean value for satisfaction occurred at the 3rd session and the minimum mean value at the 13th session. The overall mean value for satisfaction was 5.83.

All of the values for involvement and satisfaction were greater than 5.00 and hence were located in the IV quadrant. This indicates that in general the students were both involved and satisfied with the program.

Table 8. Brookline

Student Reactions (Both Sessions)

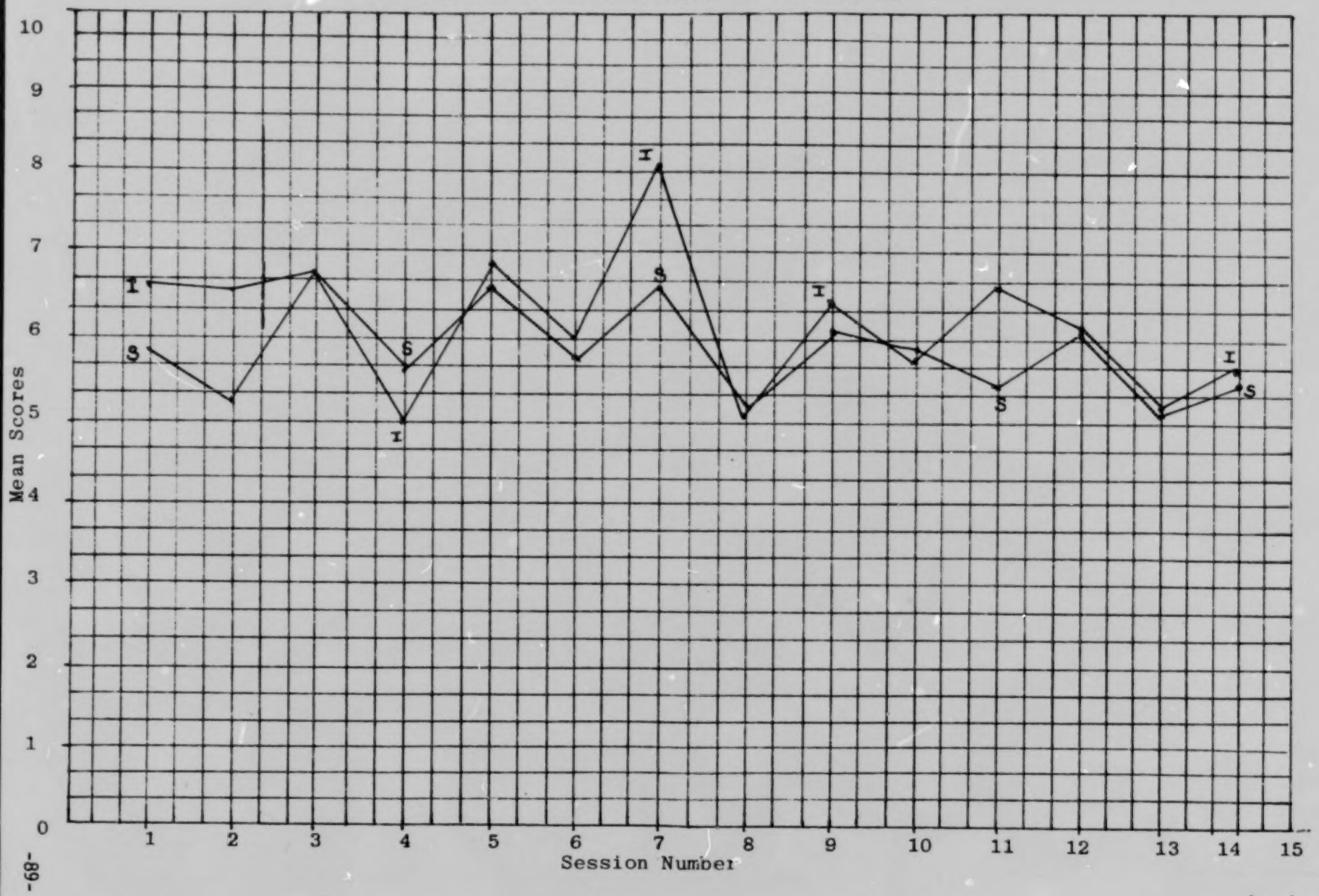
Session	N	Mean		Quadrant
		I	S	
I	16	6.56	5.79	IV
II	14	6.50	5.29	IV
III	13	6.79	6.79	IV
IV	13	5.07	5.65	IV
V	16	6.84	6.56	IV
VI	13	6.04	5.70	IV
VII	15	8.08	6.57	IV
VIII	12	5.12	5.25	IV
IX	13	6.35	6.19	IV
X	9	5.70	5.78	IV
XI	13	6.54	5.43	IV
XII	13	6.13	6.12	IV
XIII	15	5.15	5.11	IV
XIV	12	5.67	5.42	IV
Mean	13.36	6.18	5.83	IV
SD	1.82	0.82	0.54	

N = Number of Students
I = Involvement
S = Satisfaction

Brookline Schools
High & Low Structure Groups
(N=20)

Figure 9.
Mean Scores
Student Reactions

Key
I: Involvement
S: Satisfaction



Boston, Table 9 and Figure 10 depict the consolidated data for both the low and high-structured sessions. There was more variability in the mean values for involvement than satisfaction (standard deviation of 1.10 vs. 0.50). Involvement had an overall mean value of 6.82 with a peak mean value of 7.41, at the 5th session, and a minimum mean value of 5.07 at the 8th session. The maximum mean value for satisfaction, 6.68, occurred at the 3rd session, and the minimum mean value of 5.03 occurred at the 8th session. The overall mean value for satisfaction was 6.18. Since all mean values for satisfaction and involvement were greater than 5.00, they all fell into the IV quadrant. This indicated general satisfaction and involvement on the part of the students.

Barnstable, Table 10 and Figure 11 show the combined data for low and high-structured classes. The mean values for all sessions were greater than 5.00, and hence in the IV quadrant. There was greater variability in the mean values for involvement than satisfaction (standard deviation of 0.98 vs. 0.64). The maximum mean value for involvement, 8.25, was associated with the 11th session, and the minimum mean value for involvement was 6.58. The overall mean value for satisfaction was 6.18. The maximum mean value for satisfaction, 7.43 occurred at the 14th session, and the minimum value, 5.35, at the 4th session.

Stoughton, Table 11 and Figure 12 illustrate the combined data for the low- and high-structured sessions. All mean values are located in the IV quadrant. Again, there was greater variability in involvement than satisfaction (standard deviation of 0.70 vs. 0.42). Both involvement and satisfaction had maximum mean values, 7.56 and 7.00 respectively, at the 5th session, and minimum mean values, 5.32 and 5.37 respectively, at the 4th session. The overall mean value for involvement was 6.49 and 6.28 for satisfaction.

Teacher Reactions

Brookline, Table 12 depicts the combined data for both the high- and low-structured sessions. The overall combined average was 4.0, which means that the teacher indicated an overall 80% satisfaction with the program. The mean values ranged from a high of 4.7, 3rd session, to a low of 3.0, 13th session.

Boston, Table 13 shows the consolidation for high and low-structured sessions. The overall combined average was 3.7 which indicates that the teacher registered an overall satisfaction of 75%. The maximum mean value, 4.5 occurred at the 1st session, while the minimum value, 3.2 occurred at the 7th session.

Barnstable, Table 14 illustrates the combined data for the low- and high-structured sessions. The teacher indicated an overall satisfaction of about 75%, mean value of 3.7, with the program. The mean values ranged from a minimum of 3.0, 4th session, to a maximum value of 4.3 at the second session.

Table 9. Boston Student Reactions

Both Sessions

Session	N	Mean		Quadrant
		I	S	
I	15	6.36	6.32	IV
II	18	6.23	6.14	IV
III	16	7.10	6.68	IV
IV	12	6.75	6.50	IV
V	13	7.41	6.54	IV
VI	14	7.00	6.57	IV
VII	16	6.07	6.38	IV
VIII	15	5.07	5.03	IV
IX	15	6.32	6.41	IV
X	11	6.95	6.45	IV
XI	12	6.38	5.44	IV
XII	12	7.32	5.72	IV
XIII	12	7.32	5.72	IV
XIV	12	6.17	6.59	IV
Mean	13.79	6.82	6.18	IV
SD	2.08	1.10	0.50	

N = Number of Students
I = Involvement
S = Satisfaction

Boston Schools
High & Low Structure Groups
(N=20)

Figure 10.
Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

Key
I: Involvement
S: Satisfaction

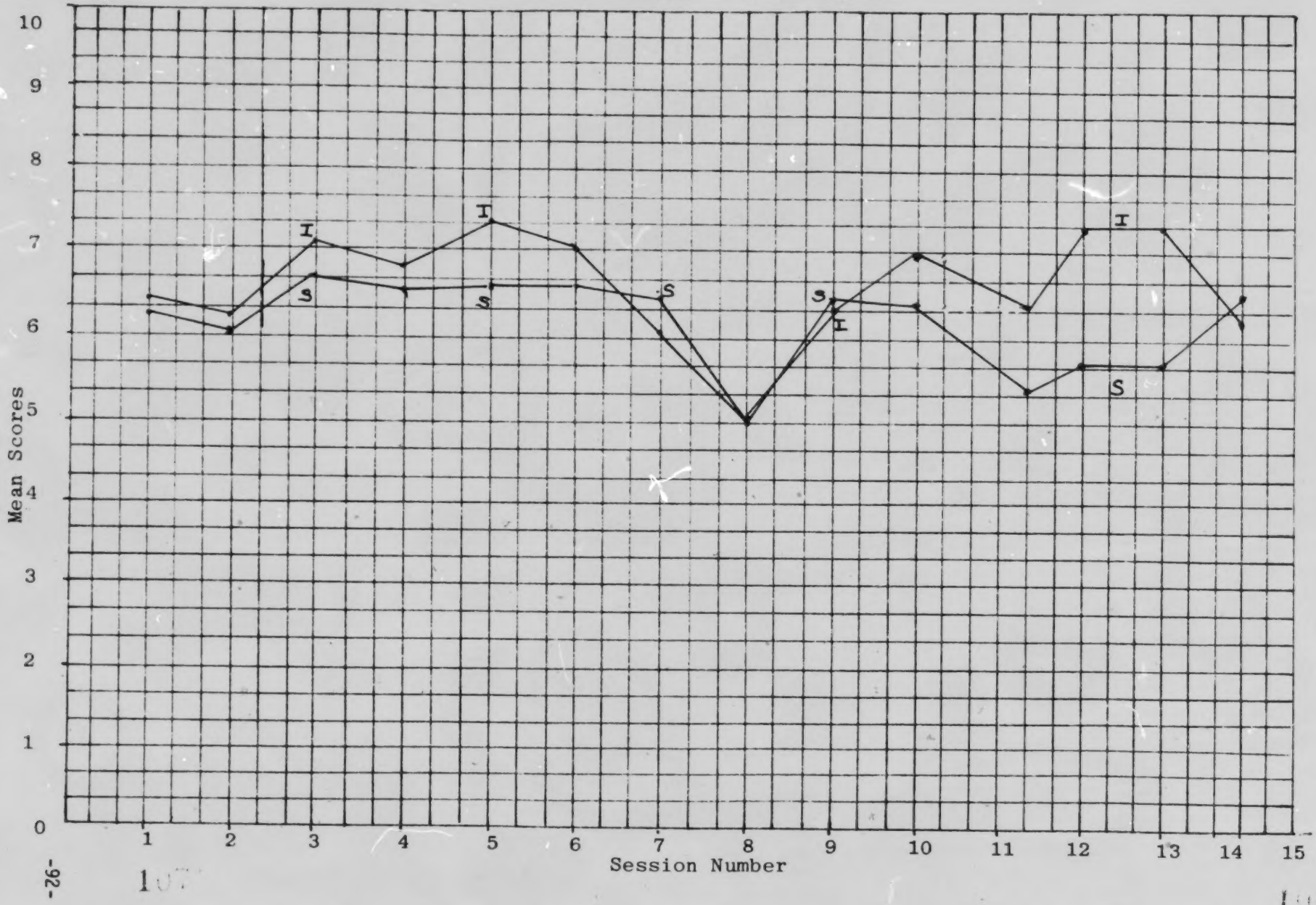


Table 10. Barnstable

Student Reactions (Both Sessions)

Session	N	Mean		Quadrant
		I	S	
I	13	6.88	6.85	IV
II	16	7.06	6.68	IV
III	13	6.31	6.20	IV
IV	14	5.63	5.35	IV
V	17	5.16	5.54	IV
VI	12	6.94	6.88	IV
VII	12	6.38	6.44	IV
VIII	--	---	---	--
IX	15	7.00	5.60	IV
X	12	6.75	5.88	IV
XI	12	8.25	6.13	IV
XII	12	5.47	5.67	IV
XIII	12	5.47	5.67	IV
XIV	10	8.22	-7.43	IV
Mean	13.08	6.58	6.18	IV
SD	1.93	0.98	0.64	

N = Number of Students
I = Involvement
S = Satisfaction

Barnstable Schools
High & Low Structure Groups
(N=20)

Figure 11.
Mean Scores
Student Reactions

Key
I: Involvement
S: Satisfaction

INVOLVEMENT AND SATISFACTION PER SESSION

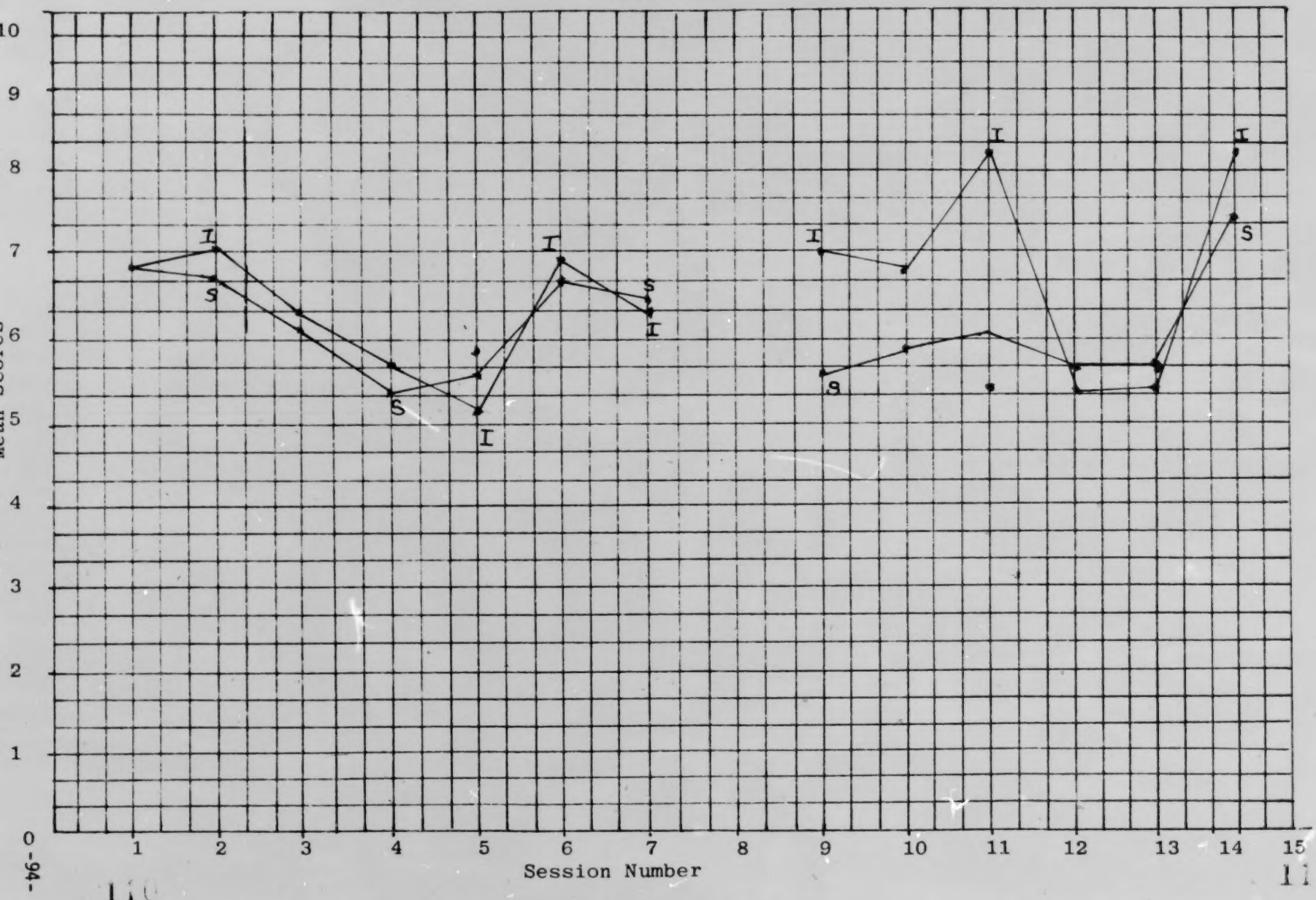


Table 11. Stoughton

Student Reactions (Both Sessions)

Session	N	Mean		Quadrant
		I	S	
I	22	7.18	5.87	IV
II	22	6.78	6.14	IV
III	17	7.15	5.68	IV
IV	22	-5.32	-5.37	IV
V	17	-7.56	-7.00	IV
VI	18	7.30	6.89	IV
VII	16	6.07	6.18	IV
VIII	18	6.78	6.61	IV
IX	15	6.61	6.50	IV
X	19	6.43	6.14	IV
XI	19	6.43	6.14	IV
XII	15	5.56	6.13	IV
XIII	15	5.56	6.13	IV
XIV	18	6.08	6.80	IV
Mean	18.07	6.49	6.28	IV
SD	2.53	0.70	0.42	

N = Number of Students
I = Involvement
S = Satisfaction

Stoughton Schools
High & Low Structure Groups
(N=20)

Figure 12
Mean Scores
Student Reactions

Key
I: Involvement
S: Satisfaction

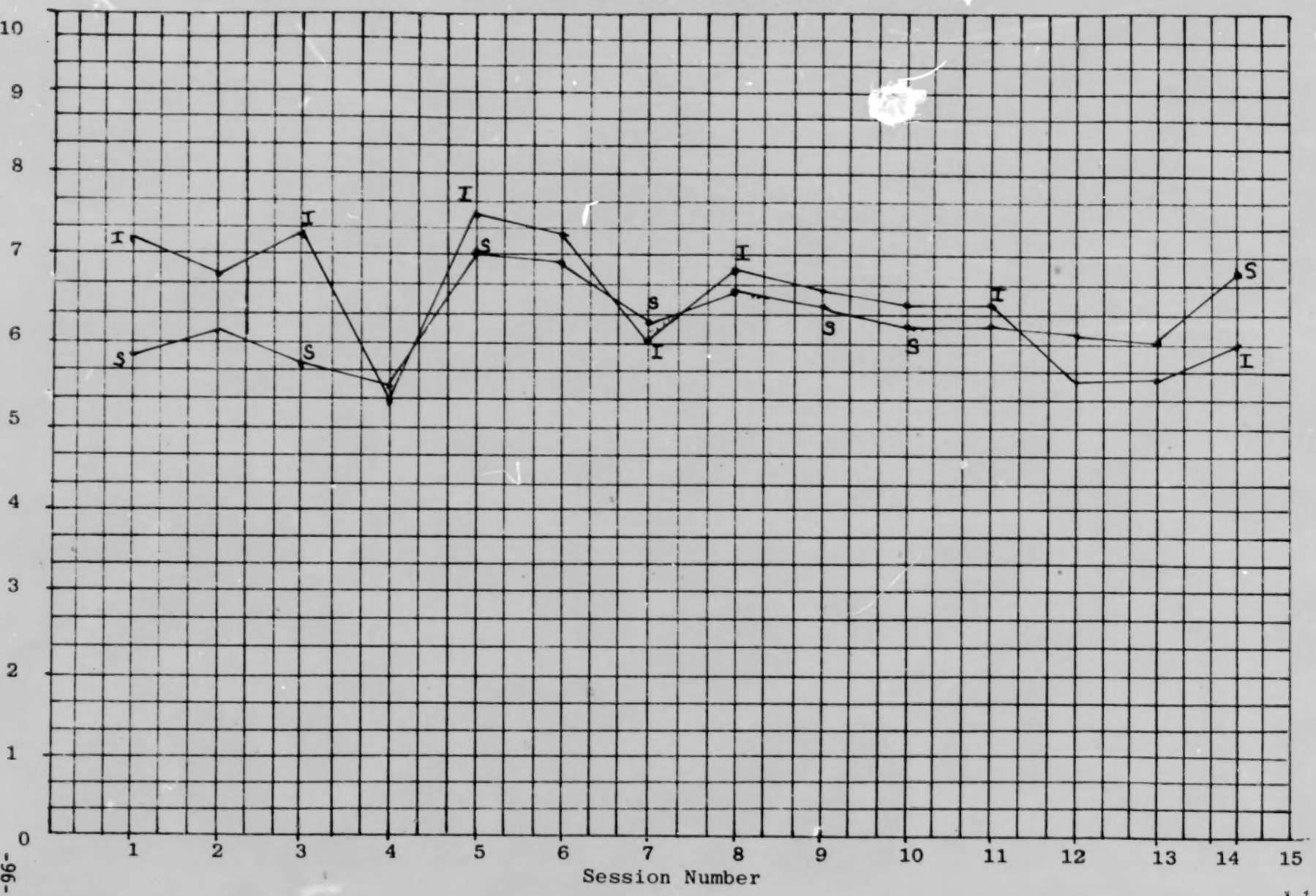


Table 12. Teacher Reactions (Mean Scores)
Brookline

Scale: 1 to 5
1 = Very Poorly or Dissatisfied
5 = Extraordinarily Well or Excellent

Because of the rounding of values to the nearest tenth (0.1) of a unit and the small scale of the percentages are subject to an error of ±2 percent

Structure	Session														Sum	Aver.	Percent
	1	2	3	4	5	6	7	8	9	10	11	12	13	14			
High	4.6	5.0	5.0	4.2	4.2	4.2	4.0	3.6	3.7	3.9	3.9	3.7	2.9	3.7	56.6	4.0	80
Low	3.5	3.9	4.3	4.3	4.1	4.2	4.1	3.9	3.9	4.0	4.0	3.9	3.1	4.0	55.2	3.9	78
Sum	8.1	8.9	9.3	8.5	8.3	8.4	8.1	7.5	7.6	7.9	7.9	7.6	6.0	7.7	111.8	7.9	158
Average	4.1	4.5	4.7	4.3	4.2	4.2	4.1	3.8	3.8	4.0	4.0	3.8	3.0	3.9	55.4	4.0	79
Percent	82	90	94	96	84	84	82	76	76	80	80	76	60	78	1138	81	81

Table 13. Teacher Reactions (Mean Scores)
Boston

Scale: 1 to 5
1 = Very Poorly or Dissatisfied
5 = Extraordinarily Well or Excellent

Because of the rounding of values to the nearest tenth (0.1) of a unit and the small scale of the percentages are subject to an error of ±2 percent

Structure	Session														Sum	Aver.	Percent
	1	2	3	4	5	6	7	8	9	10	11	12	13	14			
High	4.6	4.3	3.6	3.0	3.4	3.4	3.4	-	3.8	3.9	3.9	3.3	3.3	4.4	48.3	3.7	74
Low	4.3	4.1	3.8	3.8	3.6	3.6	3.0	-	3.9	3.8	3.8	3.2	3.2	4.2	48.5	3.7	74
Sum	8.9	8.4	7.4	6.8	7.0	7.0	6.4	-	7.7	7.7	7.7	6.5	6.5	8.6	96.8	7.4	148
Average	4.5	4.2	3.7	3.4	3.5	3.5	3.2	-	3.9	3.9	3.9	3.3	3.5	4.3	48.4	3.7	74
Percent	90	84	74	68	70	70	64	-	78	79	79	66	70	86	978	75	75

Table 14. Teacher Reactions (Mean Scores)
Barnstable

Scale: 1 to 5
1 = Very Poorly or Dissatisfied
5 = Extraordinarily Well or Excellent

Because of the rounding of values to the nearest tenth (0.1) of a unit and the small scale of the percentages are subject to an error of ±2 percent

Structure	Session														Sum	Aver.	Percent
	1	2	3	4	5	6	7	8	9	10	11	12	13	14			
High	4.2	4.3	3.5	3.2	4.0	3.5	4.0	3.6	3.5	4.0	4.0	-	-	-	41.8	3.8	76
Low	4.2	4.2	3.7	2.7	3.3	4.0	3.0	-	2.9	4.0	3.9	-	-	-	35.9	3.6	72
Sum	8.4	8.5	7.2	5.9	7.3	7.5	7.0	-	6.4	8.0	7.9	-	-	-	77.7	7.4	148
Average	4.2	4.3	3.6	3.0	3.7	3.8	3.5	-	3.2	4.0	4.0	-	-	-	38.9	3.7	74
Percent	84	86	72	60	74	76	70	-	64	80	80	-	-	-	746	75	75

Stoughton, Table 15 depicts the combined data for the low- and high-structured session. The teacher indicated an overall satisfaction of about 70%, mean value of 3.4, with the program. The mean values ranged from a minimum of 2.5, 1st session, to a maximum value of 4.4 at the 3rd session.

Program Implementation

Brookline, Table 16 shows the combined data for high- and low-structured sessions. For the sessions for which data was available, there was an overall implementation of 93% (overall mean value of 1.9). Mean values ranged from a low of 1.6, 3rd session, or 80% implementation to a high of 2.0, 2nd, 5th, 6th, 7th, and 8th session, or 100% implementation.

Boston, Table 17 illustrates the consolidated data for the high-and low-structured sessions. The data indicates that 83% (overall mean value of 1.7) was implemented. Mean values ranged from a low of 1.1, 8th session, or 55% implementation to a high of 2.0, 1st and 3rd sessions, or 100% implementation.

Barnstable, Table 18 shows the combined mean values for the low- and high-structured sessions. The data indicates an overall mean value of 1.6, or 80% implementation. The mean values ranged from a low of 1.2 or 60%, 11th session implementation to a maximum value of 2.0 for several sessions, or 100% implementation.

Stoughton, Table 19 illustrates the consolidated data for the high- and low-structured sessions. The data indicates an overall mean value of 1.6 or 80% implementation. The data ranged from a minimum value of 0.9, 11th and 12th sessions, or 45% implementation, to a maximum value of 2.0, several sessions, or 100% implementation.

4. Location (High- and Low-Structure)

Student Reactions

Brookline, Table 20 and Figures 13 and 14 illustrate the low-structure and the high-structure data for all sessions. It should be noted that the low-structure environment produced higher overall mean values for both involvement and satisfaction than the high-structure environment. Also, the variability of both involvement and satisfaction was lower for the low-structure environment (0.80 and 0.86 vs. 1.57 and 0.91 respectively).

1. High-structure - in 7 out of 14 sessions, the mean values for involvement were below 5.00. Likewise, in the same seven (4th, 6th, 8th, 10th, 11th, 13th and 14th sessions) out of fourteen sessions the mean values for satisfaction were less than 5.00. Thus, the mean values for these sessions were located in quadrant I. This seems to indicate that the students were somewhat unhappy with these sessions. However, it should be noted that more than one-half of these students were in a mismatched situation.

Table 15. Teacher Reactions (Mean Scores)
Stoughton

Scale: 1 to 5
1 = Very Poorly or Dissatisfied
5 = Extraordinarily Well or Excellent

Because of the rounding of values to the nearest tenth (0.1) of a unit and the small scale of the percentages are subject to an error of ±2 percent

Structure	Session														Sum	Aver.	Percent
	1	2	3	4	5	6	7	8	9	10	11	12	13	14			
High	4.6	4.6	4.4	3.5	2.8	4.1	3.0	4.0	3.8	2.9	2.9	2.9	2.9	3.0	49.2	3.5	70
Low	4.3	2.8	4.3	2.4	2.8	3.9	2.8	4.0	3.3	2.8	2.8	2.9	2.9	3.0	45.0	3.2	64
Sum	4.9	7.4	8.7	5.9	5.6	8.0	5.8	8.0	7.1	5.7	5.7	5.8	5.8	6.0	94.2	6.7	134
Average	2.5	3.7	4.4	3.0	2.8	4.0	2.9	4.0	3.6	2.9	2.9	2.9	2.9	3.0	47.1	3.4	68
Percent	50	74	88	60	56	80	58	80	72	58	58	58	58	60	910	65	65

Table 16. Program Implementation (Mean Scores)
Brookline

Scale: 0 to 2
0 = Not Implemented
1 = Partially Implemented
2 = Completely Implemented

Because of the rounding off of values to the nearest tenth (0.1) of a unit and the small scale, the percentages are subject to an error ±5 percent

Structure	Session														Sum	Aver.	Percent
	1	2	3	4	5	6	7	8	9	10	11	12	13	14			
High	1.8	2.0	1.6	1.6	2.0	2.0	2.0	1.9	2.0	-	-	-	-	-	16.9	1.9	95
Low	1.5	1.9	1.6	2.0	2.0	2.0	2.0	2.0	1.6	-	-	-	-	-	16.6	1.8	90
Sum	3.3	3.9	3.2	3.6	4.0	4.0	4.0	3.9	3.6	-	-	-	-	-	33.5	3.7	185
Average	1.7	2.0	1.6	1.8	2.0	2.0	2.0	2.0	1.8	-	-	-	-	-	16.8	1.9	93
Percent	85	100	80	90	100	100	100	100	90	-	-	-	-	-	845	94	94

Table 17. Program Implementation (Mean Scores)
Boston

Scale: 0 to 2
0 = Not Implemented
1 = Partially Implemented
2 = Completely Implemented

Because of the rounding off of values to the nearest tenth (0.1) of a unit and the small scale, the percentages are subject to an error ±5 percent.

Structure	Session														Sum	Aver.	Percent
	1	2	3	4	5	6	7	8	9	10	11	12	13	14			
High	2.0	1.8	2.0	1.1	1.8	1.8	1.6	1.6	1.8	1.5	1.5	1.6	1.6	-	21.7	1.7	85
Low	1.9	1.9	2.0	1.9	1.9	1.9	1.6	0.6	1.6	1.7	1.7	1.3	1.3	-	21.3	1.6	80
Sum	3.9	3.7	4.0	3.0	3.7	3.7	3.2	2.2	3.4	3.2	3.2	2.9	2.9	-	43.0	3.3	165
Average	2.0	1.9	2.0	1.5	1.9	1.9	1.6	1.1	1.7	1.6	1.6	1.5	1.5	-	21.5	1.7	83
Percent	100	95	100	75	95	95	80	55	85	80	80	75	75	-	1090	84	84

Table 18. Program Implementation (Mean Scores)
Barnstable

Scale: 0 to 2
0 = Not implemented
1 = Partially Implemented
2 = Completely Implemented

Because of the rounding off of values to nearest tenth (0.1) of a unit and the small scale, the percentages are subject to an error of 5 percent.

Structure	Session														Sum	Aver.	Percent
	1	2	3	4	5	6	7	8	9	10	11	12	13	14			
High	2.0	1.9	1.7	--	1.4	1.4	1.6	2.0	1.2	1.5	1.5	1.7	1.7	--	19.6	1.6	80
Low	2.0	2.0	--	--	2.0	2.0	2.0	2.0	1.3	1.3	0.9	0.9	--	--	16.4	1.6	80
Sum	4.0	3.9	--	--	3.2	3.4	3.6	4.0	2.5	2.8	2.4	2.6	--	--	36.0	3.2	160
Average	2.0	2.0	--	--	1.7	1.7	1.8	2.0	1.3	1.4	1.2	1.3	--	--	18.0	1.6	80
Percent	100	100	--	--	85	85	90	100	65	70	60	65	--	--	820	82	82

Table 19. Program Implementation (Mean Scores)
Stoughton

Scale: 0 to 2
0 = Not Implemented
1 = Partially Implemented
2 = Completely Implemented

Because of the rounding off of values to the nearest tenth (0.1) of a unit and the small scale, the percentages are subject to error ±5 percent

Structure	Session														Sum	Aver.	Percent
	1	2	3	4	5	6	7	8	9	10	11	12	13	14			
High	1.5	2.0	-	-	2.0	2.0	2.0	2.0	1.3	1.3	0.9	0.9	-	-	15.9	1.6	80
Low	2.0	2.0	-	-	2.0	2.0	2.0	2.0	1.3	1.3	0.9	0.9	-	-	16.4	1.6	80
Sum	3.5	4.0	-	-	4.0	4.0	4.0	4.0	2.6	2.6	1.8	1.8	-	-	32.3	3.2	160
Average	1.8	2.0	-	-	2.0	2.0	2.0	2.0	1.3	1.3	0.9	0.9	-	-	16.2	1.6	80
Percent	90	100	-	-	100	100	100	100	65	65	45	45	-	-	810	81	81

Table 20. Student Reactions (Separate Sessions)
Brookline

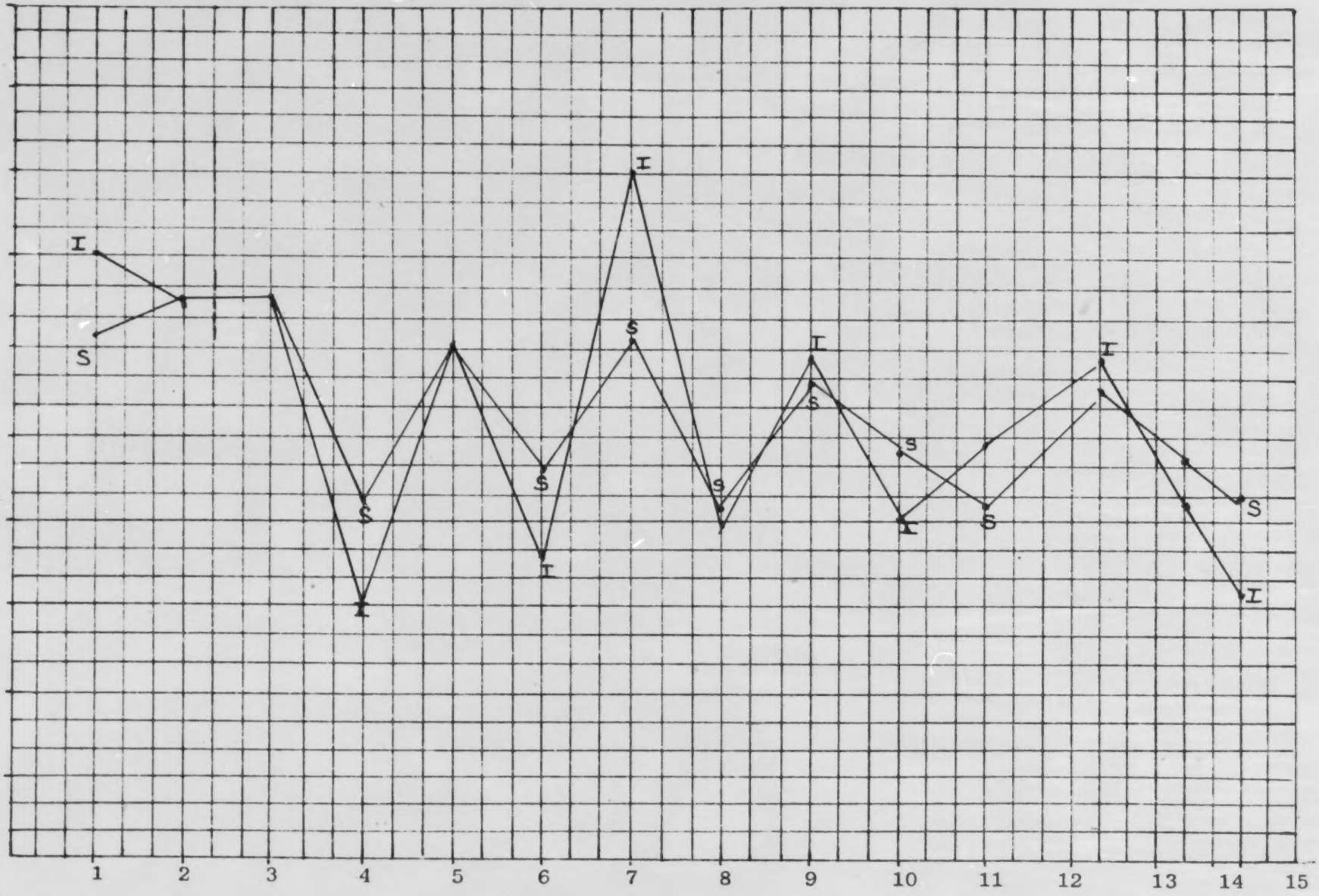
Session	Q	N	High-Structure 4 to 6 PM Mean I	Mean S	SD I	SD S	N	Q	Low-Structure 7 to 9 PM Mean I	Mean S	SD I	SD S
I	IV	7	7.00	6.14	1.29	0.38	9	IV	6.11	5.44	0.60	1.33
II	IV	7	6.57	6.57	1.81	0.53	7	II	6.43	4.00	1.62	2.24
III	IV	7	6.57	6.57	1.81	0.53	6	IV	7.00	7.00	2.80	1.67
IV	I	7	3.14	4.29	3.08	1.38	6	IV	7.00	7.00	2.80	1.67
V	IV	7	6.00	6.00	2.71	1.15	9	IV	7.67	7.11	1.58	1.17
VI	I	7	3.57	4.57	4.50	1.99	6	IV	8.50	6.83	1.22	0.41
VII	IV	7	8.29	6.14	1.25	1.86	8	IV	7.86	7.00	1.36	0.53
VIII	I	5	3.80	4.20	3.56	1.78	7	IV	6.43	6.29	1.13	0.49
IX	IV	6	5.83	5.67	2.64	1.37	7	IV	6.86	6.71	2.73	1.80
X	I	4	4.00	4.75	4.69	2.06	5	IV	7.40	6.80	1.52	1.30
XI	I	8	4.88	4.25	3.48	1.98	5	IV	8.20	6.60	1.79	0.89
XII	IV	7	5.86	5.57	2.91	1.62	6	IV	6.40	6.67	1.82	1.21
XIII	I	7	4.29	4.71	2.14	1.60	8	IV	6.00	5.50	2.33	2.78
XIV	I	6	3.50	4.33	2.74	1.86	6	IV	7.83	6.50	1.33	0.55
Mean	IV	6.57	5.24	5.27	----	----	6.79	IV	7.12	6.39	----	----
SD	--	1.02	1.57	0.91	----	----	1.31	--	0.80	0.86	----	----

N = Number of Students
I = Involvement
S = Satisfaction
SD = Standard Deviation

Brookline Schools
High Structure Group
(N=10)

Figure 13.
Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

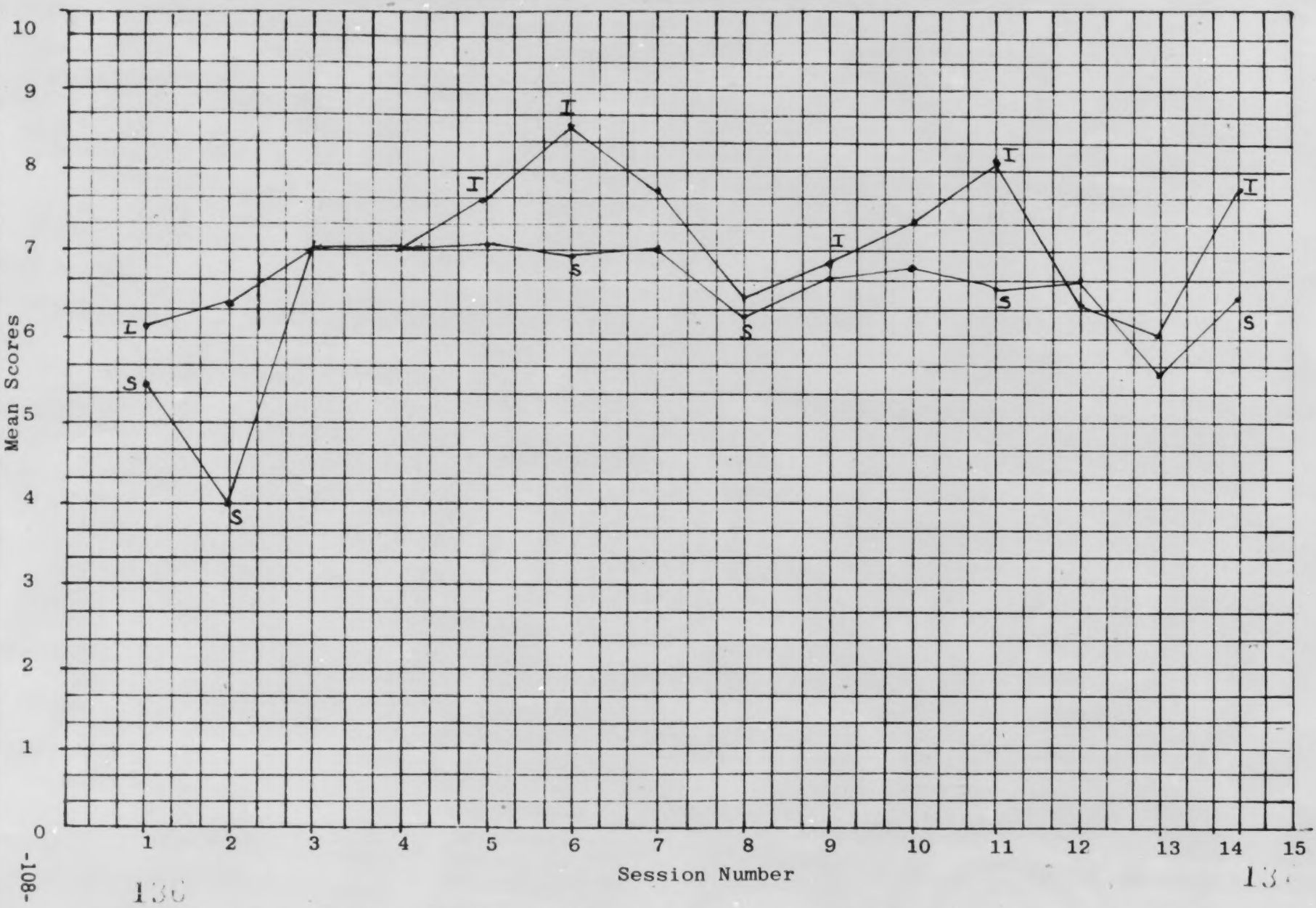
Key
I: Involvement
S: Satisfaction



Brookline Schools
Low Structure Group
(N=10)

Figure 14.
Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

Key
I: Involvement
S: Satisfaction



2. Low structure - All of the mean values for involvement were greater than 5.00, while only one of the mean values, 2nd session, for satisfaction was below 5.00. This tends to indicate that involvement and satisfaction of these students was better than average. It is noted that more than one-half of these students were in a matched situation.

Boston, Table 21 and Figures 15 and 16 depict the data for high-structure and low-structure groups for all sessions. It is noted that the overall mean values for both involvement and satisfaction are higher for the high structure group than the low structure group. Also, the variability of both involvement and satisfaction is lower for the high-structure group than the low-structure group (0.60 and 0.21 vs. 0.93 and 9.95 respectively.

1. High-structure - All of the mean values for both involvement and satisfaction are greater than 5.00, and therefore are located in quadrant IV. This indicates good satisfaction and involvement on the part of the students. It also noted that more than one half of these students were in a matched situation.

2. Low-structure - Mean values for involvement was less than 5.00, 8th session, in only one session, while the mean value for satisfaction was less than 5.00, 8th and 11th sessions, in only two sessions. It is noted that only one of the students in this group was in a mismatched situation.

Barnstable, Table 22 and Figures 17 and 18 depict the data for the low-structure and high structure groups. The overall mean values for both involvement and satisfaction were higher for the high-structure group than the low-structure group. However, the variability of the high-structure group was greater for both involvement and satisfaction than the low-structure group (1.35 and 0.89 vs. 1.07 and 0.87, respectively).

1. High-structure - In three of the 14 sessions, sessions 5, 12, and 13, the mean values for involvement were less than 5.00. However, the mean values for satisfaction were greater than 5.00 for all sessions. Therefore, the mean values for sessions 5, 12, and 13 were located in quadrant III and in quadrant IV for all other sessions. Half of the students in this group were in a matched situation and the other half mismatched.

2. Low-structure - In one of the 13 sessions, session 4, the mean value for involvement was less than 5.00. However, in 2 of the 13 sessions, sessions 5 and 9, the mean values for sessions 5 and 9 were located in quadrant II, in quadrant III for session 4, and quadrant IV for all of the other sessions. More than one-half of the students of this group were in a matched environment.

Stoughton, Table 23 and Figures 19 and 20 show the low structure and high structure data for all sessions. The overall mean values for

Table 21. Student Reactions
Boston

Session	Q	N	High-Structure 7 to 9 PM Mean I	Mean S	SD I	SD S	N	Q	Low-Structure 4 to 6 PM Mean I	Mean S	SD I	SD S
I	IV	8	6.63	6.50	1.51	0.76	7	IV	6.14	6.14	0.38	0.38
II	IV	8	6.25	6.38	0.71	0.74	10	IV	6.20	5.90	1.03	0.86
III	IV	9	7.33	6.78	1.66	1.09	7	IV	6.86	6.57	1.21	1.81
IV	IV	6	6.50	6.50	2.81	1.97	6	IV	7.00	6.50	1.55	0.55
V	IV	7	7.14	6.57	1.46	0.79	6	IV	7.67	6.50	1.51	0.55
VI	IV	8	7.00	6.63	1.41	0.74	6	IV	7.00	6.50	1.55	0.55
VII	IV	8	6.13	5.88	2.17	1.89	8	IV	6.00	6.88	2.78	1.13
VIII	IV	7	6.14	6.43	1.21	0.79	8	I	4.00	3.63	2.73	1.77
IX	IV	8	5.63	6.38	2.50	0.74	7	IV	7.00	6.43	1.41	0.53
X	IV	6	7.50	6.50	1.64	0.55	5	IV	6.40	6.40	0.89	0.89
XI	IV	8	6.25	6.13	1.16	1.13	4	II	6.50	4.75	0.58	1.89
XII	IV	7	7.43	6.43	1.81	1.62	5	IV	7.20	5.00	1.64	2.83
XIII	IV	7	7.43	6.43	1.81	1.62	5	IV	7.20	5.00	1.64	2.83
XIV	IV	6	7.00	6.50	1.55	0.55	6	IV	5.33	6.67	1.63	1.21
Mean	IV	7.36	6.74	6.43	----	----	6.43	IV	6.46	5.92	----	----
SD	--	0.93	0.60	0.21	----	----	1,55	--	0.93	0.95	----	----

N = Number of Students
I = Involvement
S = Satisfaction
SD = Standard Deviation

Boston Schools
High Structure Group
(N+10)

Figure 15.
Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

Key
I: Involvement
S: Satisfaction

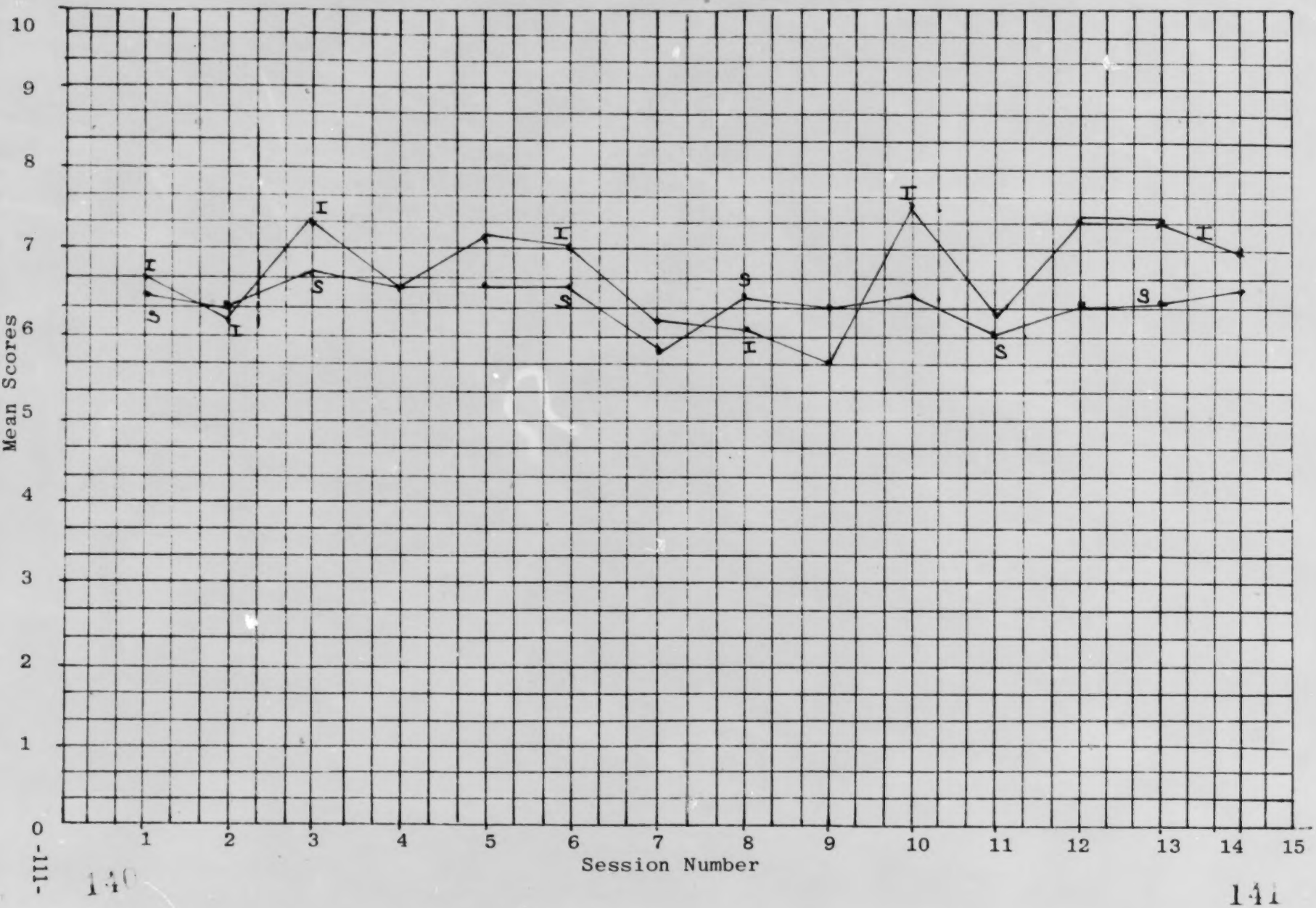


Figure 16.
Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

Boston Schools
Low Structure Group
(N = 10)

Key
I: Involvement
S: Satisfaction

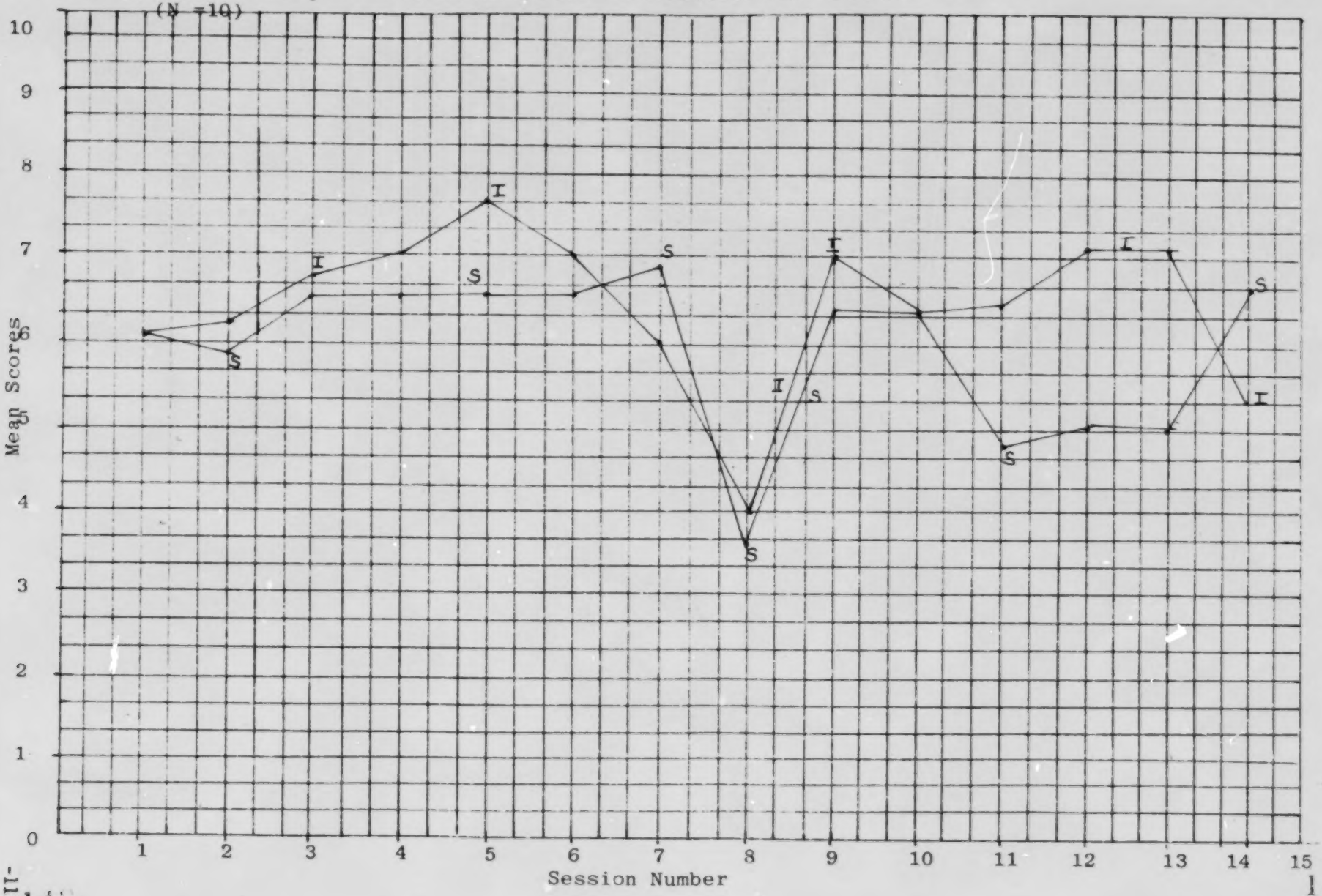


Table 22. Student Reactions (Separate Sessions)
Barnstable

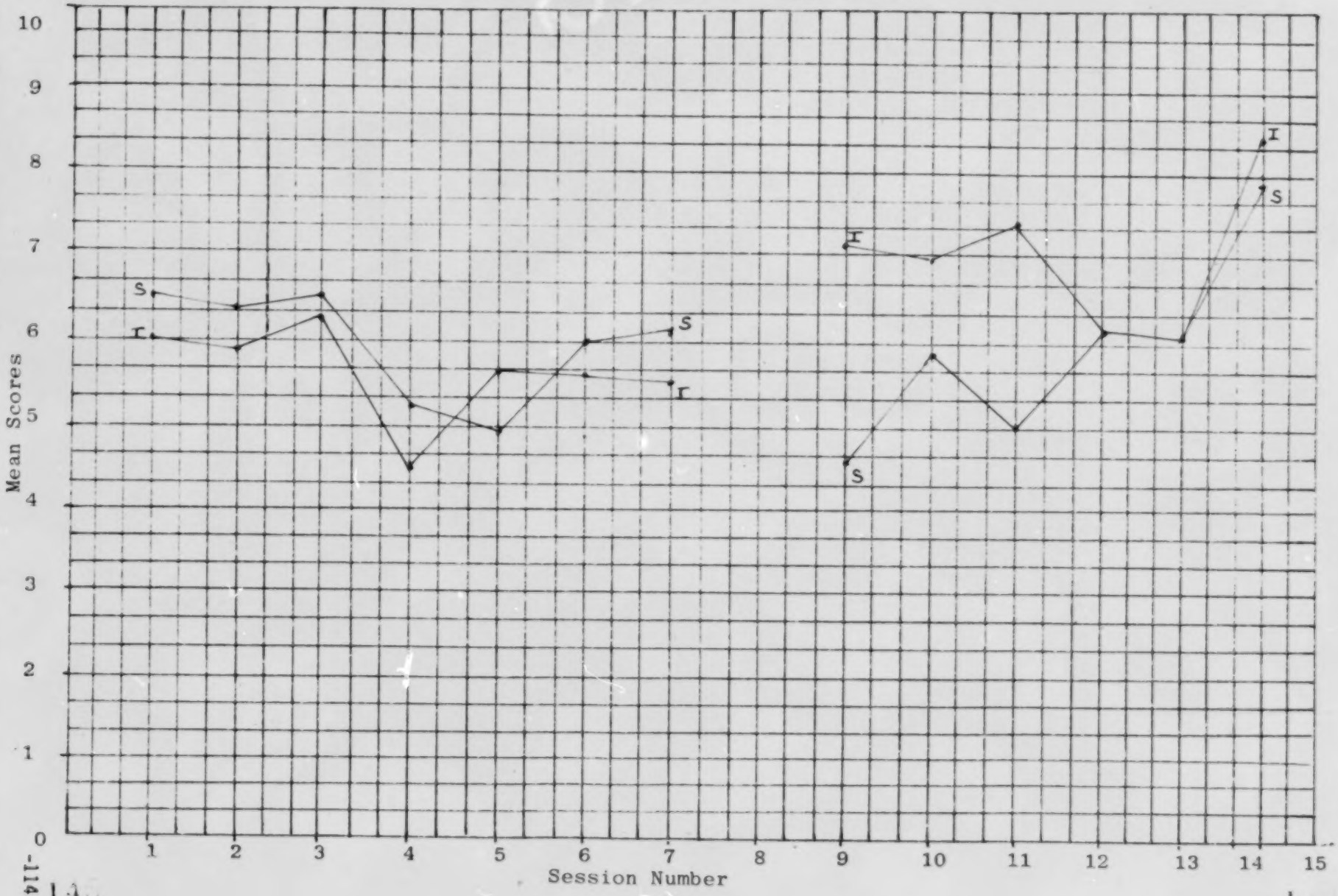
Session	Q	N	High-Structure 4 to 6 PM Mean I	Mean S	SD I	SD S	N	Q	Low-Structure 7 to 9 PM Mean I	Mean S	SD I	SD S
I	IV	4	7.75	7.25	2.06	1.64	9	IV	6.00	6.44	1.66	0.7
II	IV	5	8.20	7.00	1.30	0.71	11	IV	5.91	6.36	2.26	1.0
III	IV	6	6.33	5.83	1.86	1.72	7	IV	6.29	6.57	1.98	0.9
IV	IV	4	6.75	5.50	2.22	1.73	10	III	4.50	5.20	3.47	1.7
V	III	6	4.67	6.17	2.07	0.41	11	II	5.64	4.91	2.96	1.7
VI	IV	4	8.25	7.75	0.50	1.26	8	IV	5.63	6.00	2.00	0.9
VII	IV	4	7.25	6.75	1.50	0.96	8	IV	5.50	6.13	2.51	2.1
VIII	IV	5	6.60	5.60	2.71	2.19	-	--	----	----	----	---
IX	IV	5	6.60	6.60	1.34	1.14	10	II	7.40	4.60	1.71	2.4
X	IV	4	6.25	5.50	2.06	1.73	8	IV	7.25	6.25	1.67	1.1
XI	IV	4	8.75	7.25	0.50	0.50	8	IV	7.75	5.00	2.71	3.7
XII	III	5	4.80	5.20	4.55	2.05	7	IV	6.14	6.14	1.77	1.0
XIII	III	5	4.80	5.20	4.55	2.05	7	IV	6.13	6.14	1.77	1.0
XIV	IV	3	8.00	7.00	1.73	0.00	7	IV	8.43	7.86	2.07	1.5
Mean	IV	4.75	6.79	6.30	----	----	8.34	IV	6.35	5.97	----	---
SD	--	0.85	1.35	0.89	----	----	1.51	--	1.07	0.87		

N = Number of Students
I = Involvement
S = Satisfaction
SD = Standard Deviation

Barnstable Schools
Low Structure Group
(N=10)

Figure 17.
Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

Key
I: Involvement
S: Satisfaction



Barnstable Schools
High Structure Group
(N=10)

Figure 18.
Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

Key
I: Involvement
S: Satisfaction

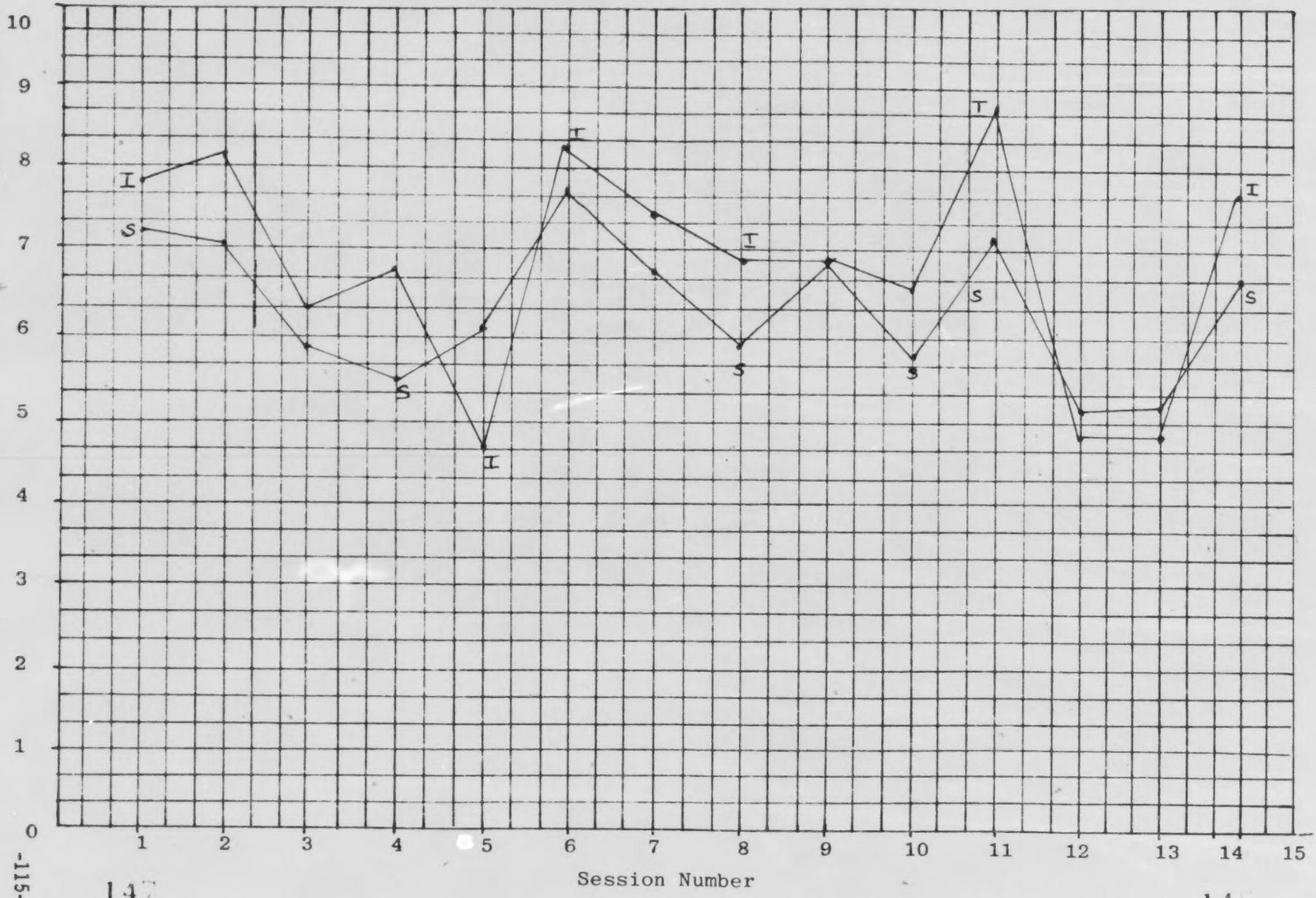


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Table 23. Student Reactions (Separate Sessions)
Stoughton

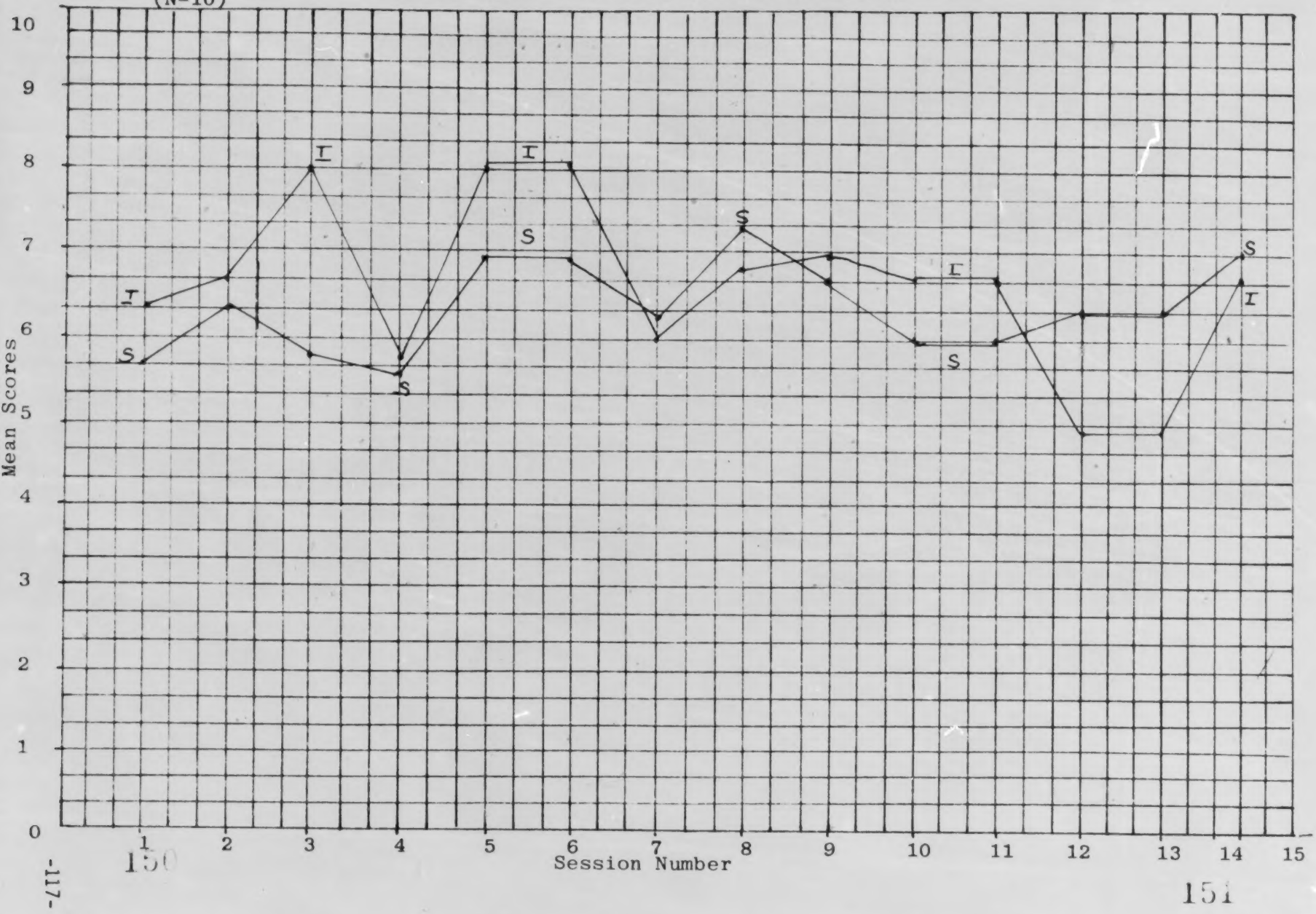
Session	Q	N	High-Structure 4 to 6 PM Mean I	Mean S	SD I	SD S	N	Q	Low-Structure 7 to 9 PM Mean I	Mean S	SD I	SD S
I	IV	11	8.00	6.09	1.18	2.12	11	IV	6.36	5.64	1.12	1.21
II	IV	11	6.91	5.91	1.92	1.87	11	IV	6.64	6.36	1.96	1.29
III	IV	10	6.30	5.50	1.16	1.58	7	IV	8.00	5.86	1.53	1.86
IV	III	11	4.91	5.18	2.70	1.83	11	IV	5.73	5.55	3.29	2.34
V	IV	9	7.11	7.11	1.36	0.60	8	IV	8.00	6.88	1.31	1.25
VI	IV	10	6.60	6.90	1.26	0.86	8	IV	8.00	6.88	1.31	1.25
VII	IV	7	6.14	6.14	2.67	1.46	9	IV	6.00	6.22	1.32	0.44
III	IV	9	6.78	5.89	1.99	2.09	9	IV	6.78	7.33	2.68	2.00
IX	IV	6	6.33	6.33	0.82	0.82	9	IV	6.89	6.67	1.67	1.12
X	IV	9	6.56	6.67	1.51	1.22	10	IV	6.30	5.60	1.83	2.27
XI	IV	9	6.56	6.67	1.51	1.22	10	IV	6.30	5.60	1.83	2.27
XII	IV	8	6.25	6.25	0.71	0.71	7	III	4.86	6.00	1.95	0.00
III	IV	8	6.25	6.25	0.71	0.71	7	III	4.86	6.00	1.95	0.00
XIV	IV	10	5.40	6.60	2.67	1.58	8	IV	6.75	7.00	2.43	2.33
ean	IV	9.14	6.44	6.25	----	----	8.93	IV	6.53	6.26	----	----
D	--	1.51	0.73	0.53	----	----	1.49	--	1.01	0.60	----	----

N = Number of Students
I = Involvement
S = Satisfaction
SD = Standard Deviation

Figure 19.
Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

Stoughton Schools
Low Structure Group
(N=10)

Key
I: Involvement
S: Satisfaction

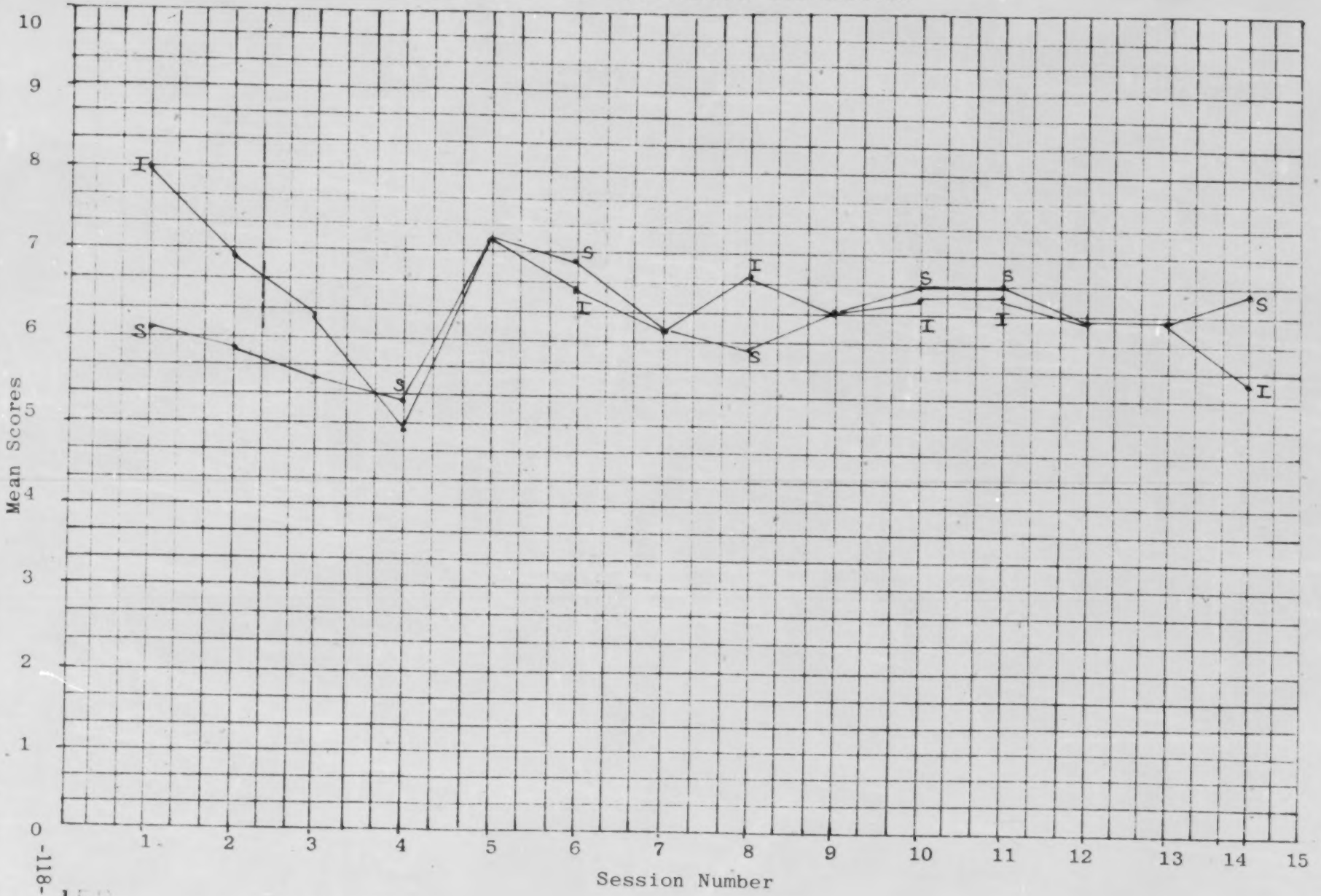


Stoughton Schools
High Structure Group
(N=10)

Figure 20.

Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

Key
I: Involvement
S: Satisfaction



the low-structure group are higher for both involvement and satisfaction than the high-structure group. However, the variability of both involvement, and involvement and satisfaction is less for the high-structure group than the low-structure group (0.73 and 0.53 vs. 1.01 and 0.60 respectively).

1. High-structure - Only the mean value, 4.91, for the fourth session for involvement is less than 5.00, while all of the mean values for satisfaction are greater than 5.00. Hence, all of the mean values are located in quadrant IV except for the 7th session which is located in quadrant III. More than half of the students in this group were in a mismatched situation.

2. Low-structure - Only the mean values, 4.86, for both the 12th and 13th sessions for involvement were less than 5.00, and all of the mean values for satisfaction were greater than 5.00. Thus, the mean value for the 12th and 13th session are located in quadrant III, and all other mean values in quadrant IV. Most of the students of this group were in a matched situation.

Teacher Reaction

Brookline: Table 12 shows the data for both the high-structure and low-structure groups. The overall mean value for the high-structure group was 4.0 (or 80% satisfaction), while the overall mean value for the low-structure group was 3.9 (78% satisfaction).

1. High-structure - Mean values ranged from 2.9 to 5.0. Two of the 14 mean values were 5.0 (100% satisfaction), while only one of the fourteen was 2.9 (58% satisfaction). This indicates that the teacher was very satisfied with this group.

2. Low-structure - The mean values ranged from a low of 3.1 (62% satisfaction) to a high of 4.3 (86% satisfaction). Only one of the fourteen mean values was as low as 3.1, while two of the fourteen were 4.3.

Boston: Table 13 illustrates the data for both the high-structure and the low-structure groups. The overall mean values for both the low-structure and high-structure groups was 3.7 (or approximately 75% satisfaction).

1. High-structure - The mean values for the high-structure group ranged from a low of 3.0 (60% satisfaction) to a high of 4.6 (92% satisfaction).

2. Low-structure - The mean values for the low-structure gruop ranged from a low of 3.0 to a high of 4.3.

Barnstable: Table 14 depicts the data for both the low- and high-structure groups. The overall mean value for the high-structure group was 3.8 (or 75% satisfaction, and 3.6 for 72% satisfaction) for the low-structure group.

1. High-structure - The mean values for the high-structure group ranged from a low of 3.2 (64% satisfaction) to a high of 4.3 (86% satisfaction).

2. Low-structure - The mean values for the low-structure group ranged from a low of 2.7 (54% satisfaction) to a high value of 4.2 (84% satisfaction).

Stoughton: Table 15 illustrates the data for the low- and high-structure groups. The overall mean values for the high-structure group was 3.5 (or 70% satisfaction), and 3.2 (or 64% satisfaction) for the low-structure group. These were the lowest values for the four locations. This could be attributed to a difference in orientation of the teacher in relation to his students.

1. High-structure - The mean values ranged from a low of 2.9 (58% satisfaction) to a high of 4.6 (92% satisfaction. It is noted that the high mean values occurred near the beginning of the program and most of the low mean values near the end of the program.

2. Low-structure - The mean values ranged from a low of 2.4 (48% satisfaction) to a high of 4.3 (86% satisfaction). Again, the high mean values occurred near the beginning of the program, while the low mean values were generally bunched near the end of the program.

Brookline: Table 16 tabulates high- and low-structured data for all sessions. Data for the last five sessions is not available for either structure. The overall mean for the high-structure group was 1.9 (or 95% implementation), and 1.8 (or 90% implementation) for the low-structure group. This was indeed a very good performance.

1. High-structure - The mean values ranged from a low of 1.6 (80% implementation) to a high of 2.0 (100% implementation). In five of the nine sessions documented, the mean values were 2.0 and in only two of the nine sessions 1.6.

2. Low-structure - The mean values ranged from a low of 1.5 (75% implementation) to a high of 2.0 (100% implementation). The mean value of 2.0 was recorded for five of the nine sessions, while the mean value of 1.5 was recorded for only one session.

Boston: Table 17 shows the data for the low-structure and high-structure groups for each session. The mean value for the high-structure group was 1.7 (85% implementation), and 1.6 (80% implementation) for the low-structure group. Data for the last session is not available for either group.

1. High-structure - The mean values ranged from a low of 1.1 (55% implementation) to a high of 2.0 (100% implementation). The low mean value of 1.1 was recorded on only one occasion, while the high value of 2.0 was recorded on two occasions.

2. Low-structure - The mean values ranged from a low of 0.6 (30% implementation) to a high of 2.0 (100% implementation). The high mean values were bunched near the beginning of the program, while the low mean values were bunched near the end of the program. However, the lowest mean value, 0.6, was observed on the 8th session.

Barnstable: Table 18 illustrates the data for the high- and low-structure groups for each session. The overall mean value was 1.6 (80% implementation) for the low-structure group as well as the high-structure group.

1. High structure - The mean values ranged from a low of 1.2 (60% implementation) to a high of 2.0 (100% implementation). The low mean value was recorded for only one session, while the high mean value was recorded for two sessions.

2. Low-structure - The mean values ranged from a low of 0.9 (45% implementation) to a high of 2.0 (100% implementation). The high values occurred at the beginning and middle of the program, while the low values occurred near the end of the program.

Stoughton: Table 19 shows the data for each session for the high- and low-structure groups. The overall mean value was 1.6 (80% implementation) for the low-structure group as well as the high-structure group.

1. High-structure - The mean values ranged from a low of 0.9 (45% implementation) to a high of 2.0 (100% implementation). Again, the high mean values were observed at the beginning of the program, and the low values near the end of the program.

2. Low-structure - The mean values have the identical configuration and distribution as those for the high-structure.

5. Matched-Mismatched Students

All Locations

Matched-mismatched data are available only for student's reaction. Such data are not available for teacher reactions or program implementation. Table 23 and Figures 21 and 22 depict the consolidated matched and mismatched data for all schools. The overall mean values for involvement and satisfaction were slightly higher for the matched group than the mismatched group for both involvement and satisfaction. The standard deviation of the means for involvement was lower for the matched than the mismatched group, while the standard deviation for satisfaction was the same for both groups.

1. Matched - All of the mean values for the matched group exceeded 5.00 for both involvement and satisfaction. This placed all of the mean values in quadrant IV.

Table 24. Student Reactions (All Schools)

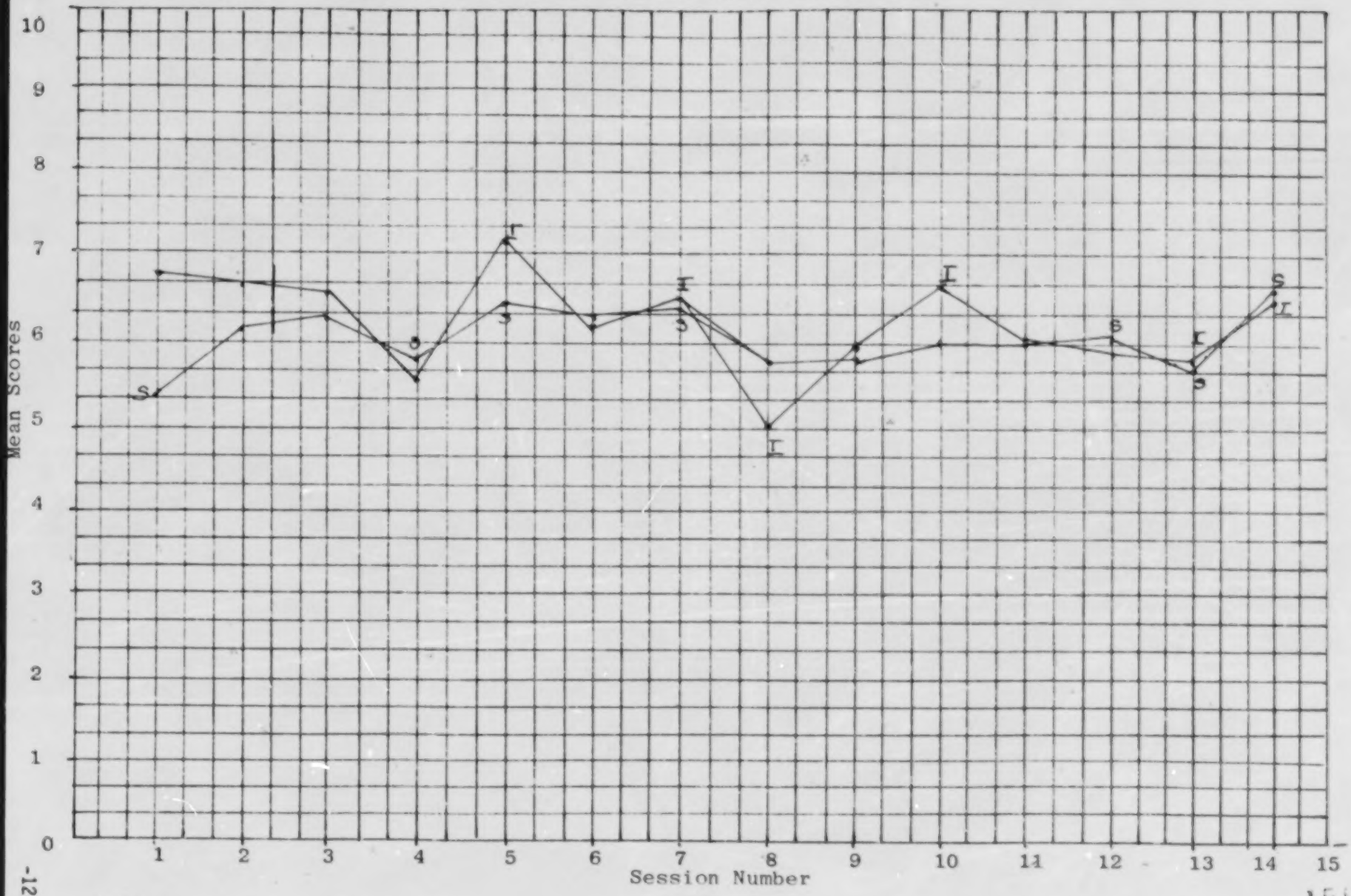
Session	Q	N	Matched				N	Q	Mismatched			
			I		S				I		S	
			Mean	SD	Mean	SD			Mean	SD	Mean	SD
I	IV	43	6.62	0.39	6.21	0.50	23	IV	6.72	0.40	5.37	1.47
II	IV	45	6.47	0.42	6.02	0.40	24	IV	6.64	0.77	6.15	0.97
III	IV	32	6.84	0.73	6.33	0.76	25	IV	6.56	0.22	6.21	0.62
IV	IV	40	5.82	0.64	5.91	0.52	20	IV	5.56	1.71	5.71	1.54
V	IV	40	6.59	0.95	6.37	0.63	23	IV	7.15	1.24	6.47	0.89
VI	IV	34	7.20	1.12	6.69	0.23	22	IV	6.12	2.09	6.14	1.32
VII	IV	36	6.59	0.91	6.39	0.26	22	IV	6.53	1.31	6.42	0.31
VIII	IV	32	6.55	1.19	5.70	0.95	17	IV	5.00	1.08	5.77	0.44
IX	IV		6.92	0.33	6.09	0.74	19	IV	5.99	1.01	5.91	0.38
X	IV	33	6.67	0.62	6.23	0.34	17	IV	6.69	0.63	5.99	0.29
XI	IV	32	7.05	1.28	5.59	0.78	23	IV	6.08	0.38	6.05	0.96
XII	IV	31	5.94	1.35	5.90	0.38	18	IV	5.99	1.07	6.04	0.32
XIII	IV	32	5.97	1.35	5.68	0.24	21	IV	5.88	1.27	5.72	0.93
XIV	IV	29	6.56	1.20	6.54	0.58	22	IV	6.45	2.05	6.58	1.37
Mean	IV	35.36	6.56	----	6.12	----	21.14	IV	6.24	----	6.04	----
SD	--	4.86	0.41	----	0.33	----	2.57	--	0.55	----	0.33	----

N = Number of Students
I = Involvement
S = Satisfaction
SD = Standard Deviation

All Schools
Mismatched Participants -
Receptivity to Structure

Figure 21
Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

Key
I: Involvement
S: Satisfaction

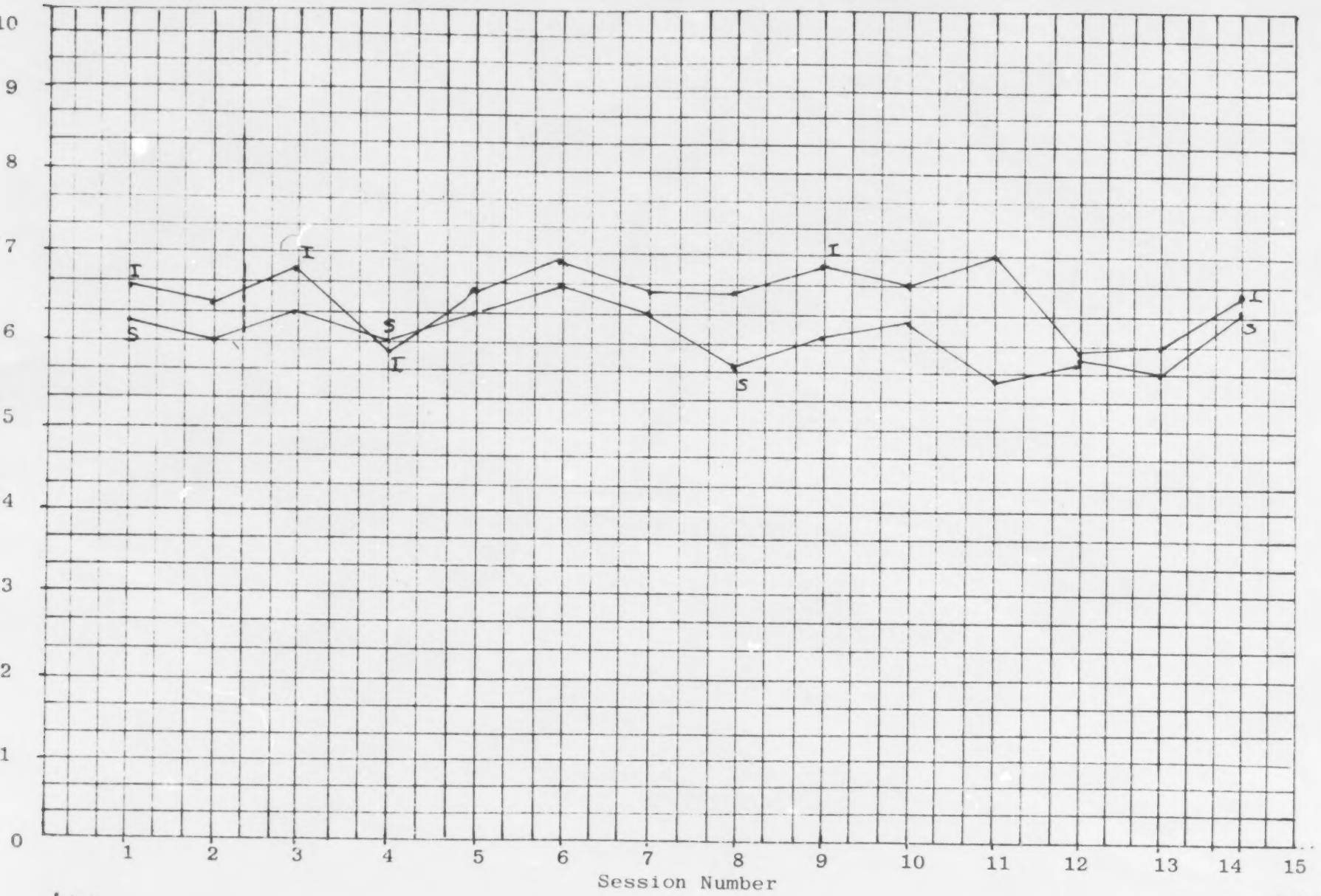


All Schools
Matched Participants -
Receptivity to Structure

Figure 22.

Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

Key
I: Involvement
S: Satisfaction



2. Mismatched - All of the mean values for the mismatched group were greater than 5.00 for both involvement and satisfaction. This placed all of the mean values in quadrant IV.

The session by session pattern for all locations reveal a rather novel or unexpected finding. A review of Figures 21 and 22, mismatched and matched data respectively, reveal a pattern of fluctuation for involvement and satisfaction. Mismatched students and treatments tend to be more involved than satisfied one week, and they reversed the pattern the next session. The matched students were always more involved than satisfied, with the exception of session four. These findings suggest that matched groups find their instruction a more even experience - stable and continuous.

Location

Brookline: Table 24, and Figures 23 and 24 summarize the data for the matched and mismatched groups on a session by session basis. The overall mean values for both involvement and satisfaction were higher for the matched group than the mismatched group by considerable amounts (6.55 and 6.06 vs. 5.57 and 5.44 respectively). Likewise, the variability of both involvement and satisfaction is much less for the matched group than the mismatched group (standard deviations of 0.95 and 0.63 vs. 1.61 and 0.76, respectively).

1. Matched - The mean values ranged from a low of 5.00, 14th session, to a high of 8.71 at the 6th session for involvement, while the mean values ranged from a low of 5.14, 11th session, to a high of 7.13 for the 3rd session for satisfaction. Since all mean values were equal to or greater than 5.00, they were located in quadrant IV.

2. Mismatched - The mean values for involvement ranged from a high of 8.29, for session 7, down to a low of 3.00 for session 6. There were also five other mean values for involvement that were less than 5.00. The mean values for satisfaction ranged from a low of 4.16, session 4, to a high of 6.43 for session 5. There were also three other mean values less than 5.00 for satisfaction. The mean values for sessions 4, 6, and 9 were located in quadrant I, in quadrant II for session 2, in quadrant III for sessions 8 and 12, and in quadrant IV for all other sessions.

Boston: Table 25, and Figures 25 and 26 depict the matched and mismatched data. The overall mean value for the involvement was a little higher for the matched group than the mismatched group (6.69 vs. 6.58). However, the overall mean value for satisfaction was a little lower for the matched group than the mismatched group (6.20 vs. 6.50). The variability of both involvement and satisfaction was about the same for both the matched and mismatched group (0.77 and 0.57 vs. 0.78 and 0.55).

1. Matched - The mean values for involvement ranged from 5.00 for session 8, to 7,86, sessions 12 and 13, while the mean

Table 24. Student Reactions
Brookline

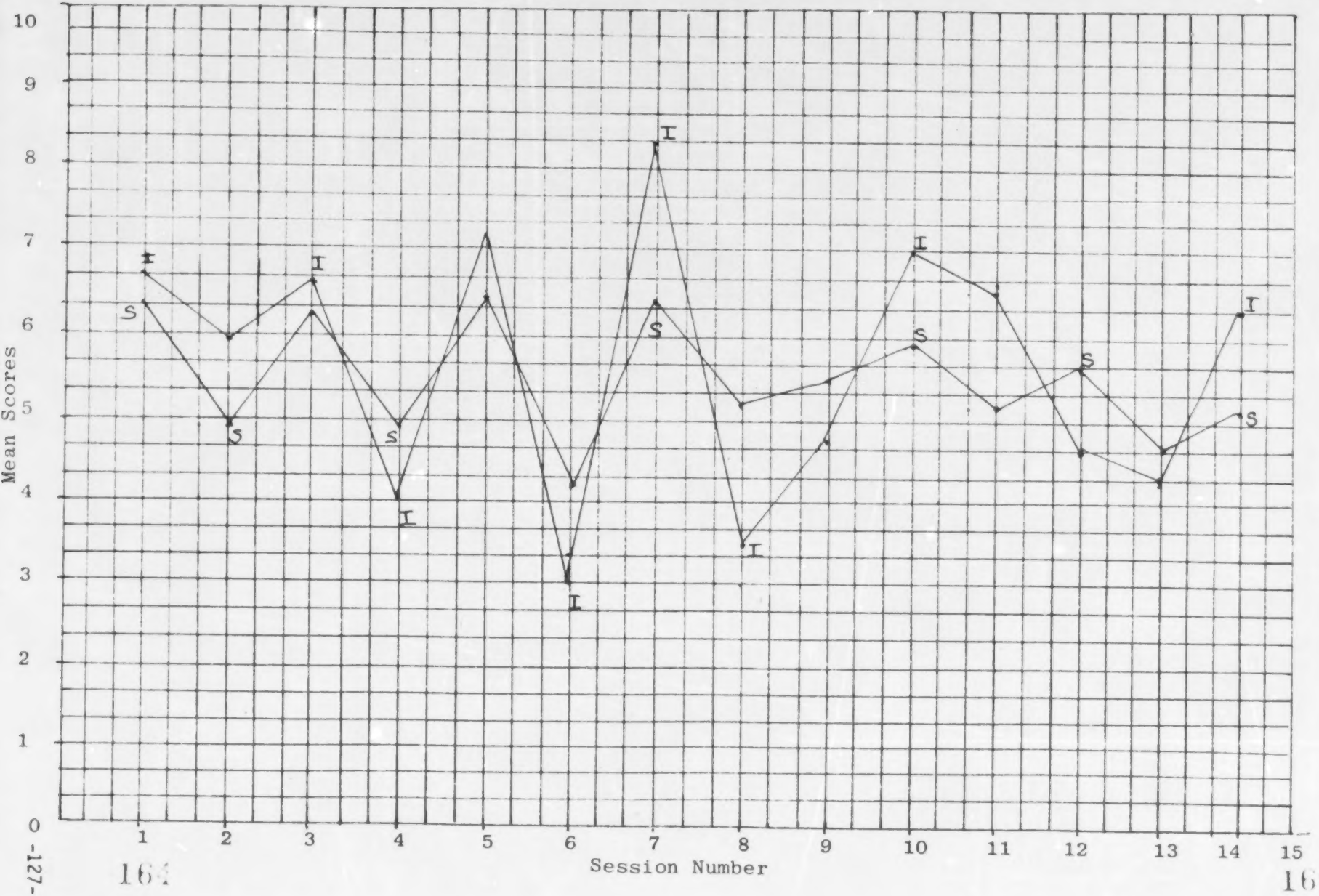
Session	Q	N	Matched				N	Q	Mismatched			
			Mean		SD				Mean		SD	
			I	S	I	S			I	S	I	S
I	IV	10	6.40	5.50	0.97	1.27	6	IV	6.67	6.33	1.21	0.52
II	IV	9	6.89	5.56	1.36	2.07	5	II	5.80	4.80	2.50	2.17
III	IV	8	6.86	7.13	2.62	1.25	5	IV	6.60	6.20	2.30	0.84
IV	IV	8	6.13	6.00	2.64	2.27	5	I	4.00	4.80	3.61	1.48
V	IV	9	6.78	6.78	2.64	1.56	7	IV	7.14	6.43	1.77	0.79
VI	IV	7	8.71	6.75	0.76	0.38	6	I	3.00	4.16	4.24	1.83
VII	IV	8	7.88	6.75	1.55	0.46	7	IV	8.29	6.42	0.95	1.99
VIII	IV	8	6.25	5.50	2.19	1.69	4	III	3.50	5.25	2.89	1.50
IX	IV	8	7.25	6.25	1.49	0.46	4	III	4.75	5.50	4.11	2.65
X	IV	8	5.75	5.88	3.77	2.03	1	IV	7.00	6.00	0.00	0.00
XI	IV	7	5.86	5.14	3.62	1.95	6	IV	6.50	5.17	3.21	2.23
XII	IV	8	5.88	6.38	2.23	1.41	5	III	4.40	5.60	2.07	1.67
XIII	IV	9	6.00	5.44	2.18	2.07	6	I	4.00	4.33	2.19	2.07
XIV	IV	6	5.00	5.67	2.87	1.37	6	IV	6.33	5.17	2.94	2.14
Mean	IV	8.07	6.55	6.06	----	----	5.21	IV	5.57	5.44	----	----
SD	--	1.00	0.95	0.63	----	----	1.53	---	1.61	0.76	----	----

N = Number of Students
I = Involvement
S = Satisfaction
SD = Standard Deviation

Brookline Schools
Mismatched Group

Figure 23.
Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

Key:
I: Involvement
S: Satisfaction



Brookline Schools
Matched Group

Figure 24
Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

Key
I: Involvement
S: Satisfaction

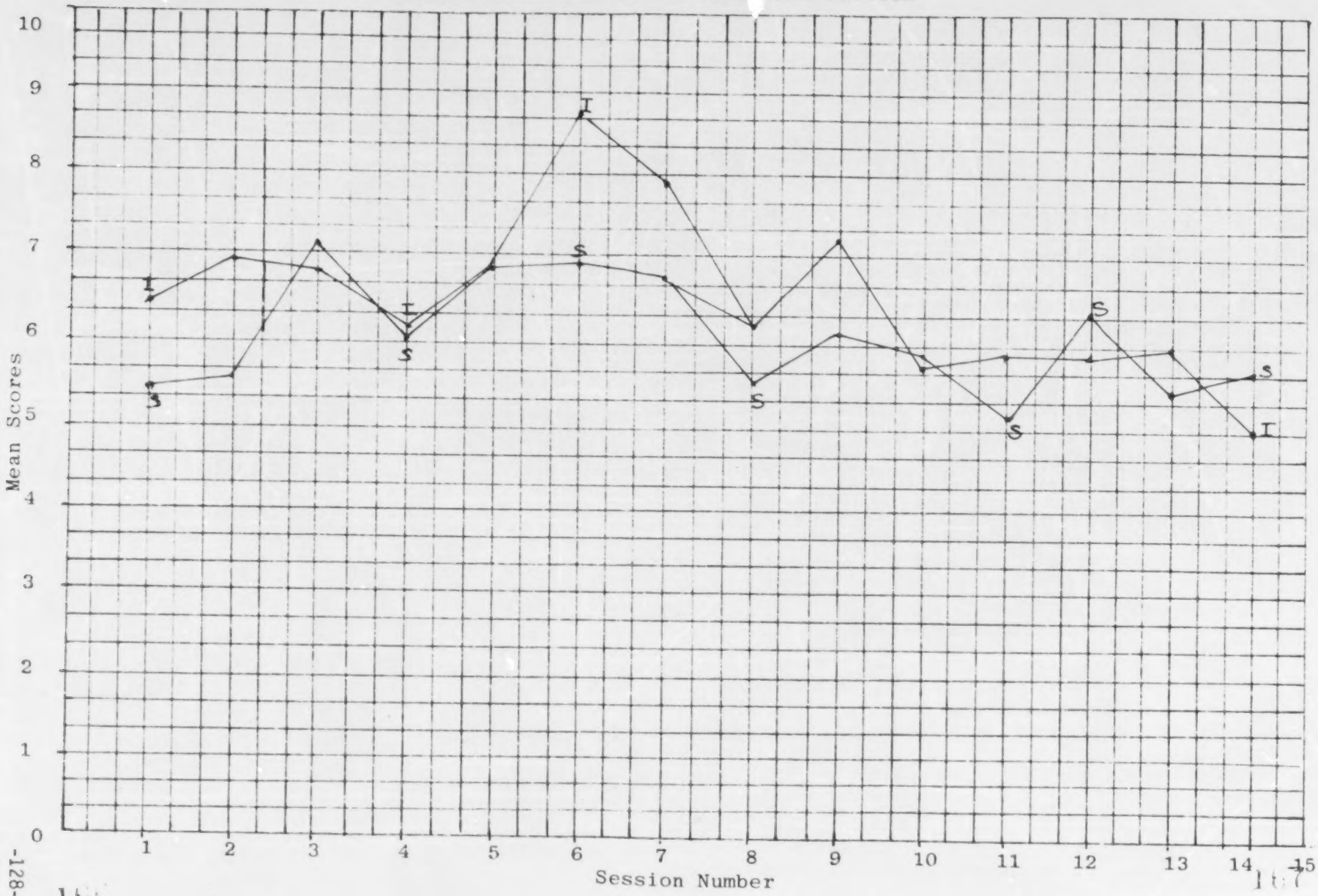


Table 25. Student Reactions
Boston

Session	Q	N	Matched				N	Q	Mismatched			
			Mean		SD				Mean		SD	
			I	S	I	S			I	S	I	S
I	IV	11	6.27	6.27	1.01	0.65	4	IV	6.75	6.50	1.50	0.58
II	IV	13	5.92	5.85	0.28	0.69	4	IV	7.25	7.00	1.50	0.82
III	IV	9	7.11	6.78	1.54	1.79	5	IV	6.40	6.40	0.89	0.89
IV	IV	9	6.56	6.56	2.24	0.53	2	IV	8.00	8.00	2.83	2.83
V	IV	10	7.30	6.40	1.49	0.52	3	IV	7.69	7.00	1.53	1.00
VI	IV	9	7.00	6.56	1.50	0.53	4	IV	7.25	6.75	1.50	0.96
VII	IV	11	6.27	6.36	2.57	1.86	4	IV	5.50	6.50	2.52	1.00
VIII	II	10	5.00	4.70	2.79	2.06	4	IV	5.50	6.25	1.00	0.50
IX	IV	10	6.50	6.50	2.01	0.71	5	IV	5.80	6.20	2.49	0.45
X	IV	7	7.14	6.57	1.46	0.79	3	IV	7.00	6.33	1.73	0.58
XI	IV	7	6.57	6.00	1.27	0.82	4	IV	6.00	6.00	0.00	1.41
XII	IV	7	7.86	5.71	1.77	2.93	4	IV	6.50	6.00	1.73	0.82
XIII	IV	7	7.86	5.71	1.77	2.93	4	IV	6.50	6.00	1.73	0.82
XIV	IV	8	6.25	6.88	2.19	0.99	3	IV	6.00	6.00	0.00	0.00
Mean	IV	9.14	6.69	6.20	----	----	3.79	IV	6.58	6.50	----	----
SD	--	1.83	0.77	0.57	----	----	0.80	--	0.78	0.55	----	----

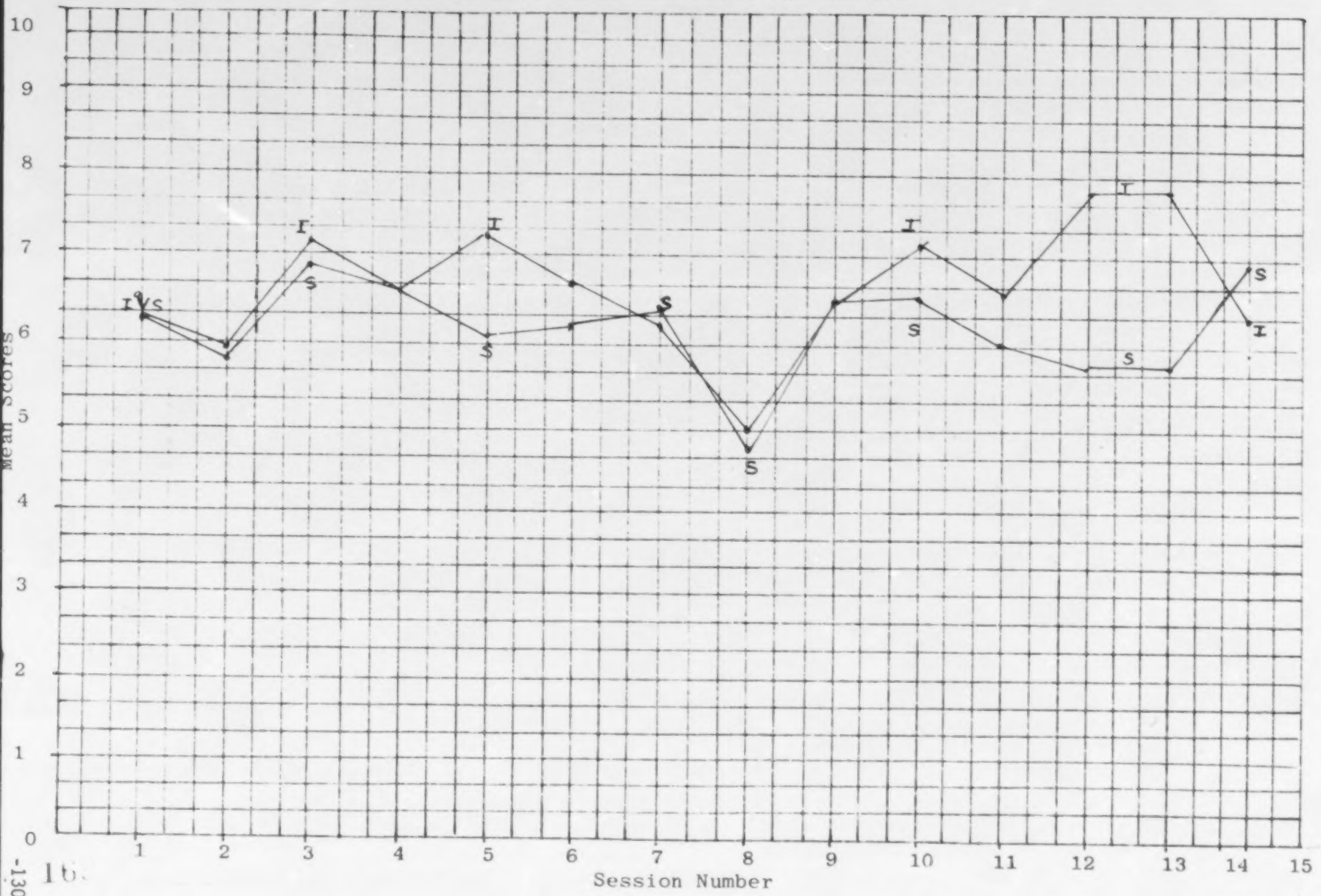
N = Number of Students
I = Involvement
S = Satisfaction
SD = Standard Deviation

Boston Schools
Matched Group
(N=20)

Figure 25

Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

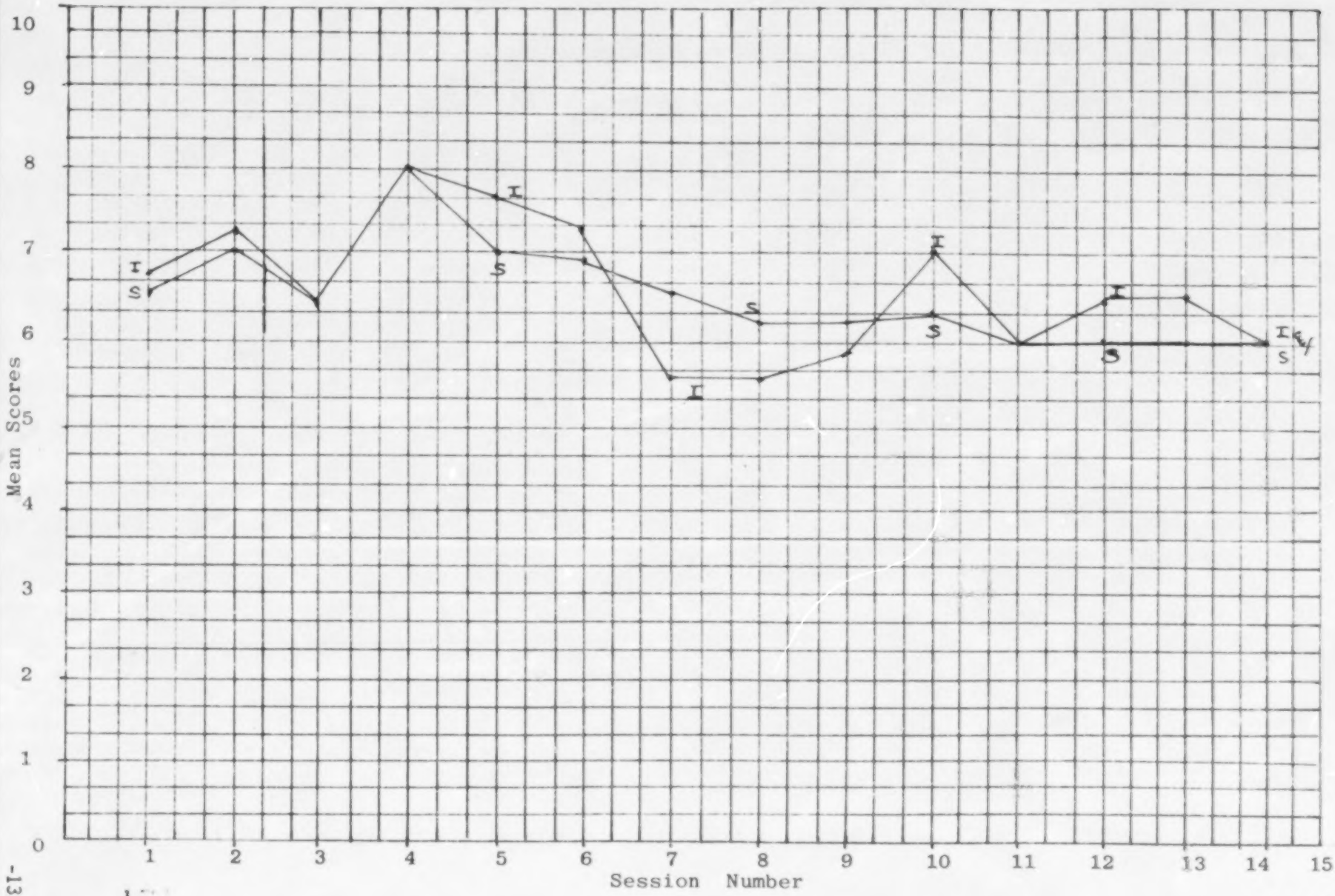
Key
I: Involvement
S: Satisfaction



Boston Schools
Mismatched Group
(N=10)

Figure 26.
Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

Key
I: Involvement
Satisfaction



values for satisfaction ranged from 6.88, session 14, to 4.70, session 8. All of the mean values were located in quadrant IV, except those for session 8 which were located in quadrant II.

2. Mismatched - The mean values for satisfaction ranged from a low of 6.00, sessions 11, 12, 13 and 14, to a high of 8.00 for session 4. While the mean values for involvement ranged from a high of 8.00 for session 4, down to a low of 5.50 for sessions 8 and 9. All of the mean values were located in quadrant IV.

Barnstable: Table 26, and Figures 27 and 28 summarized the data for the matched and mismatched groups. The overall mean values for both involvement and satisfaction were higher for the mismatched group than the matched group (6.60 and 6.49 vs. 6.38 and 5.75, respectively). There was more variability for the matched group than the mismatched group for the construct, involvement (standard devision of 1.15 vs. 1.06). However, there was less variability for the matched group than the mismatched group for the construct, satisfaction (0.65 vs. 0.86).

1. Matched - The mean values for involvement ranged from a high of 8.86 for session 11, down to a low of 5.00 for sessions 12 and 13. While the mean values for satisfaction ranged from a low of 4.57 for session 11, to a high of 6.80 for session 14. All of the mean values were located in quadrant IV except for session 11, which were located in quadrant II.

2. Mismatched - The mean values for satisfaction ranged from a low of 5.25 for session 4, to a high of 8.40 for session 14. While the mean values for involvement ranged from a high of 9.20 for session 14, down to a low of 5.00 for sessions 4 and 8. All mean values were located in quadrant IV.

Stoughton: Table 27 and Figures 29 and 30 summarize the data for the matched and mismatched groups. The overall mean values for both involvement and satisfaction were larger for the matched groups than the mismatched groups (6.61 and 6.41 vs. 6.29 and 6.00, respectively). Also, there was greater variability for both constructs, involvement and satisfaction for the mismatched group group than for the matched group (1.03 and 0.66 vs. 0.88 and 0.44).

1. Matched - The mean values for involvement ranged from a low of 5.00 for sessions 11 and 12, to a high of 7.60 for session 14. The mean values for satisfaction ranged from a high of 7.27 for session 8, down to a low of 5.77 for session 4. All of the mean values were located in quadrant IV.

2. Mismatched - The mean values for involvement ranged from a high of 8.33 for session 5, to a low of 4.25 for session 14. The mean values for satisfaction ranged from a high of 7.17 for session 5, to a low of 4.78 for session 4. All mean values were located in quadrant IV except session 4, which were in quadrant II, and session 14, which were in quadrant III.

Table 26. Student Reactions
Barnstable

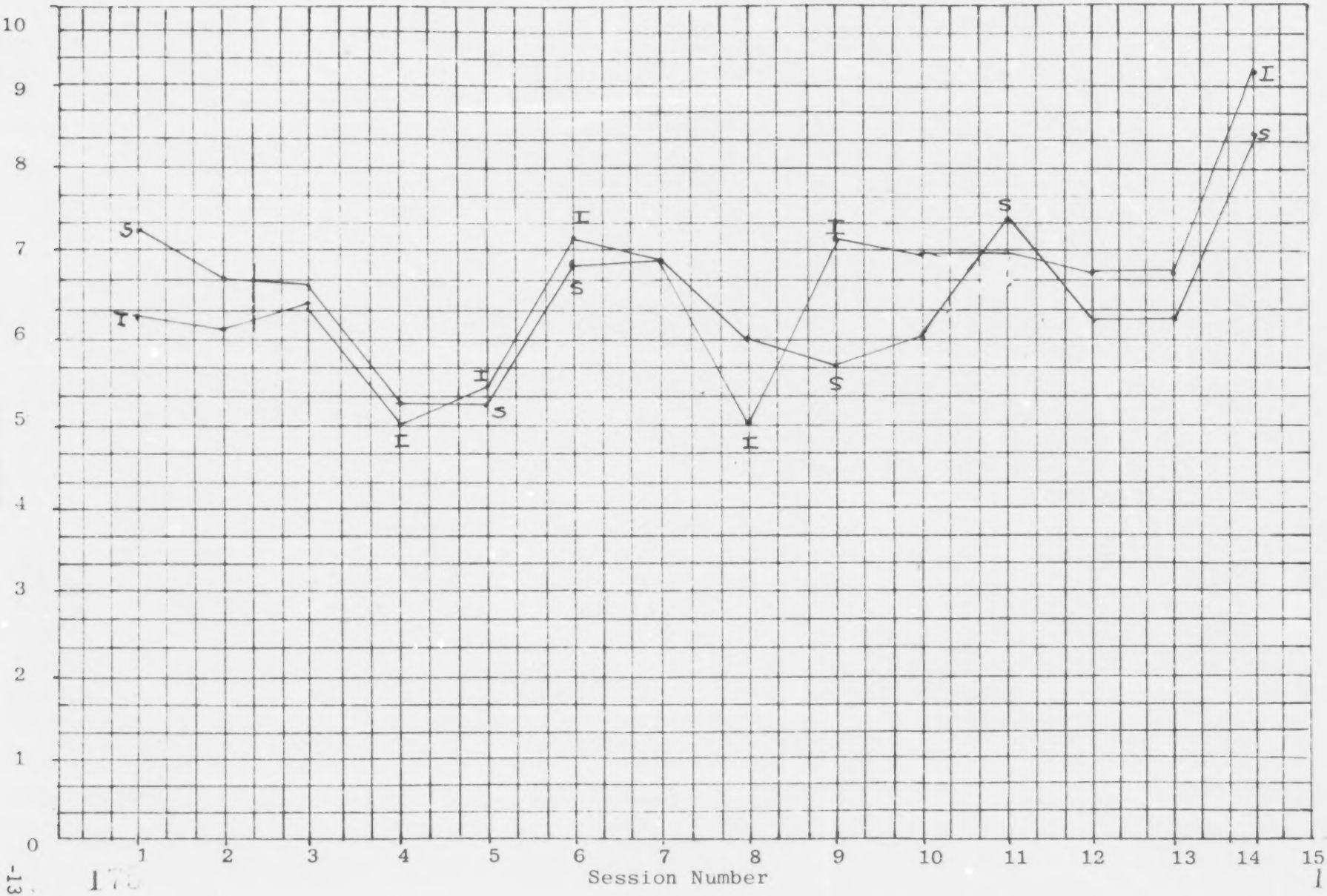
ssion	Q	N	Matched Mean I	Matched Mean S	Matched SD I	Matched SD S	N	Q	Mismatched Mean I	Mismatched Mean S	Mismatched SD I	Mismatched SD S
I	IV	9	6.67	6.44	1.12	0.73	4	IV	6.25	7.25	3.30	1.89
II	IV	10	6.70	6.50	2.16	1.08	6	IV	6.17	6.67	2.48	0.82
II	IV	6	5.83	5.50	1.47	1.64	7	IV	6.71	6.86	2.14	0.69
IV	IV	10	5.20	5.30	3.26	1.64	4	IV	5.00	5.25	3.74	2.06
V	IV	10	5.20	5.40	2.86	1.51	7	IV	5.43	5.29	2.57	1.70
VI	IV	7	6.00	6.43	2.00	1.40	5	IV	7.20	6.80	2.17	1.30
II	IV	8	5.75	6.13	2.43	2.10	4	IV	6.75	6.75	2.22	0.96
II	IV	3	7.67	5.33	0.58	3.06	2	IV	5.00	6.00	4.24	0.00
IX	IV	9	7.11	5.00	1.76	2.55	6	IV	7.17	5.67	1.47	1.86
X	IV	7	6.86	6.00	1.86	1.41	5	IV	7.00	6.00	1.87	1.41
XI	II	7	8.86	4.57	0.90	3.74	5	IV	7.00	7.40	3.16	1.14
II	IV	8	5.00	5.50	3.63	1.85	4	IV	6.75	6.25	1.50	0.50
II	IV	8	5.00	5.55	3.63	1.85	4	IV	6.75	6.25	1.50	0.50
IV	IV	5	7.40	6.80	2.30	0.45	5	IV	9.20	8.40	0.84	1.52
an	IV	7.64	6.38	5.75	----	----	4.86	IV	6.60	6.49	----	----
D	--	2.02	1.15	0.65	----	----	1.35	--	1.06	0.86	----	----

N = Number of Students
I = Involvement
S = Satisfaction
SD = Standard Deviation

Barnstable Schools
Mismatched Group
(N=20)

Figure 27.
Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

Key
I: Involvement
S: Satisfaction



Barnstable Schools
Matched Group
(N==10)

Figure 28
Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

Key
I: Involvement
S: Satisfaction

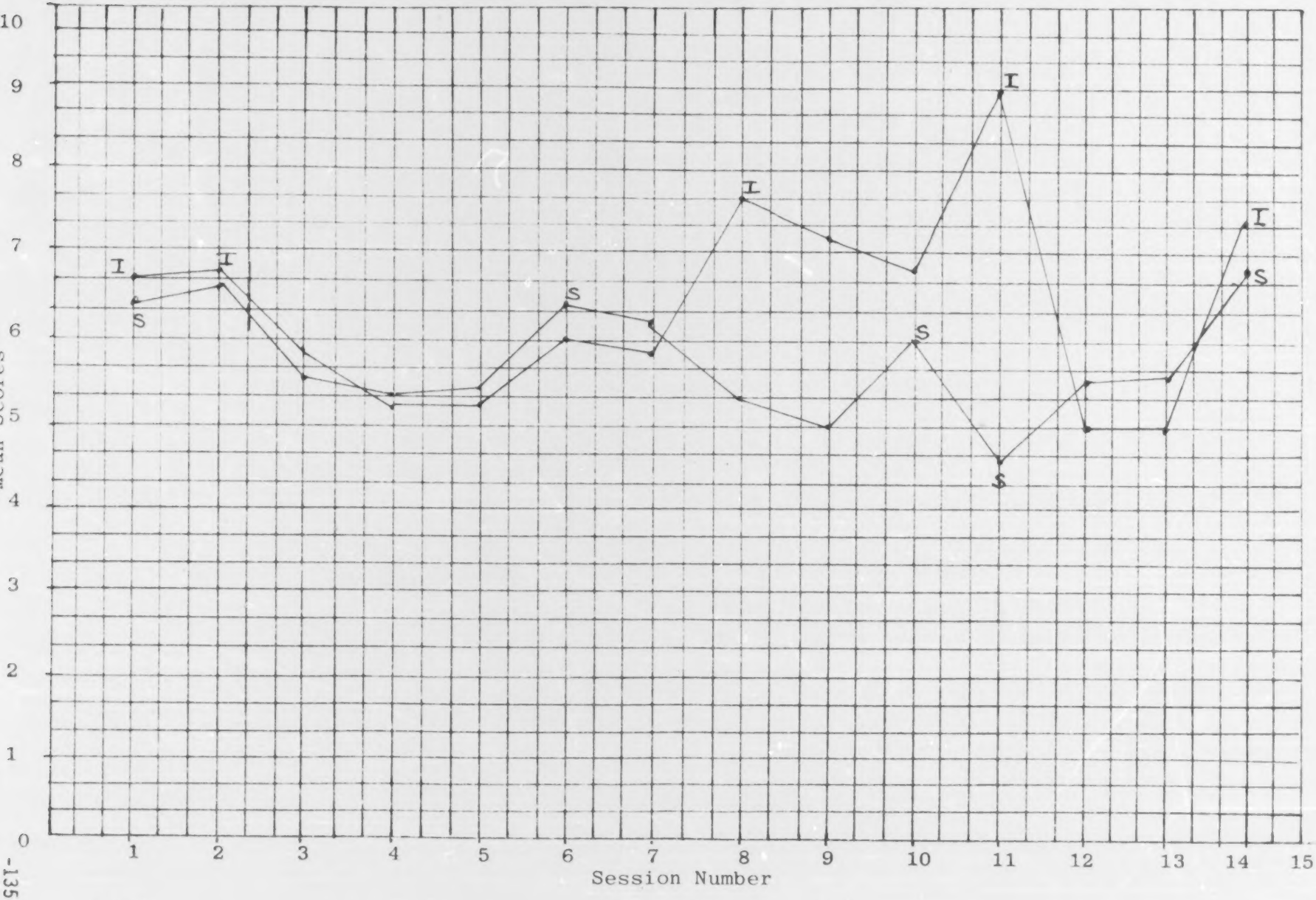


Table 27. Student Reactions
Stoughton

Session	Q	N	Matched				N	Q	Mismatched			
			Mean		SD				Mean		SD	
			I	S	I	S			I	S	I	S
I	IV	13	7.15	6.23	1.52	1.48	9	IV	7.22	5.33	1.30	1.94
II	IV	13	6.38	6.15	1.66	1.57	9	IV	7.33	6.11	2.18	1.69
III	IV	9	7.56	5.89	1.42	1.76	8	IV	6.38	5.38	1.51	1.60
IV	IV	13	5.38	5.77	2.96	1.88	9	II	5.22	4.78	3.15	2.28
V	IV	11	7.09	6.91	1.30	1.14	6	IV	8.33	7.17	1.21	0.41
VI	IV	11	7.09	6.91	1.30	1.14	7	IV	7.42	6.86	1.72	0.90
VII	IV	9	6.44	6.33	1.01	0.50	7	IV	5.57	6.00	2.76	1.41
VIII	IV	11	7.27	7.27	2.41	1.79	7	IV	6.00	5.57	2.00	2.30
IX	IV	11	6.82	6.64	0.98	0.92	4	IV	6.25	6.25	1.26	1.26
X	IV	11	6.91	6.45	1.70	1.75	8	IV	5.75	5.63	1.39	2.07
XI	IV	11	6.91	6.45	1.70	1.75	8	IV	5.75	5.63	1.39	2.07
XII	IV	8	5.00	6.00	1.85	0.00	7	IV	6.29	6.29	0.76	0.76
XIII	IV	8	5.00	6.00	1.85	0.00	7	IV	6.29	6.29	0.76	0.76
XIV	IV	10	7.60	6.80	1.58	2.10	8	III	4.25	6.75	2.66	1.75
Mean	IV	10.64	6.61	6.41	----	----	7.43	IV	6.29	6.00	----	-----
SD	--	1.69	0.88	0.44	----	----	1.34	--	1.03	0.66	----	----

N = Number of Students
I = Involvement
S = Satisfaction
SD = Standard Deviation

Stoughton Schools
Matched Group
(N=40)

Figure 29
Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

Key
I: Involvement
S: Satisfaction

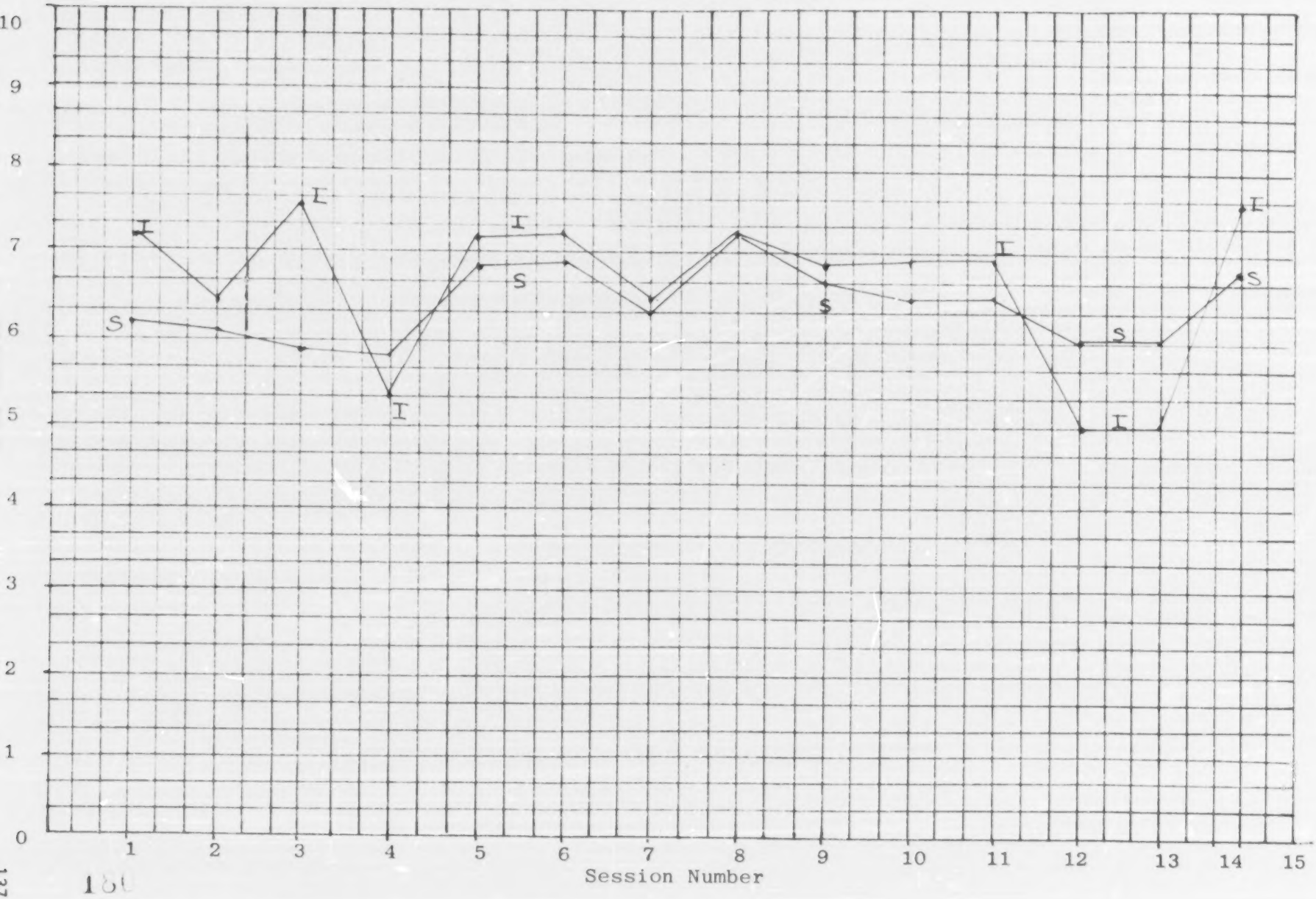
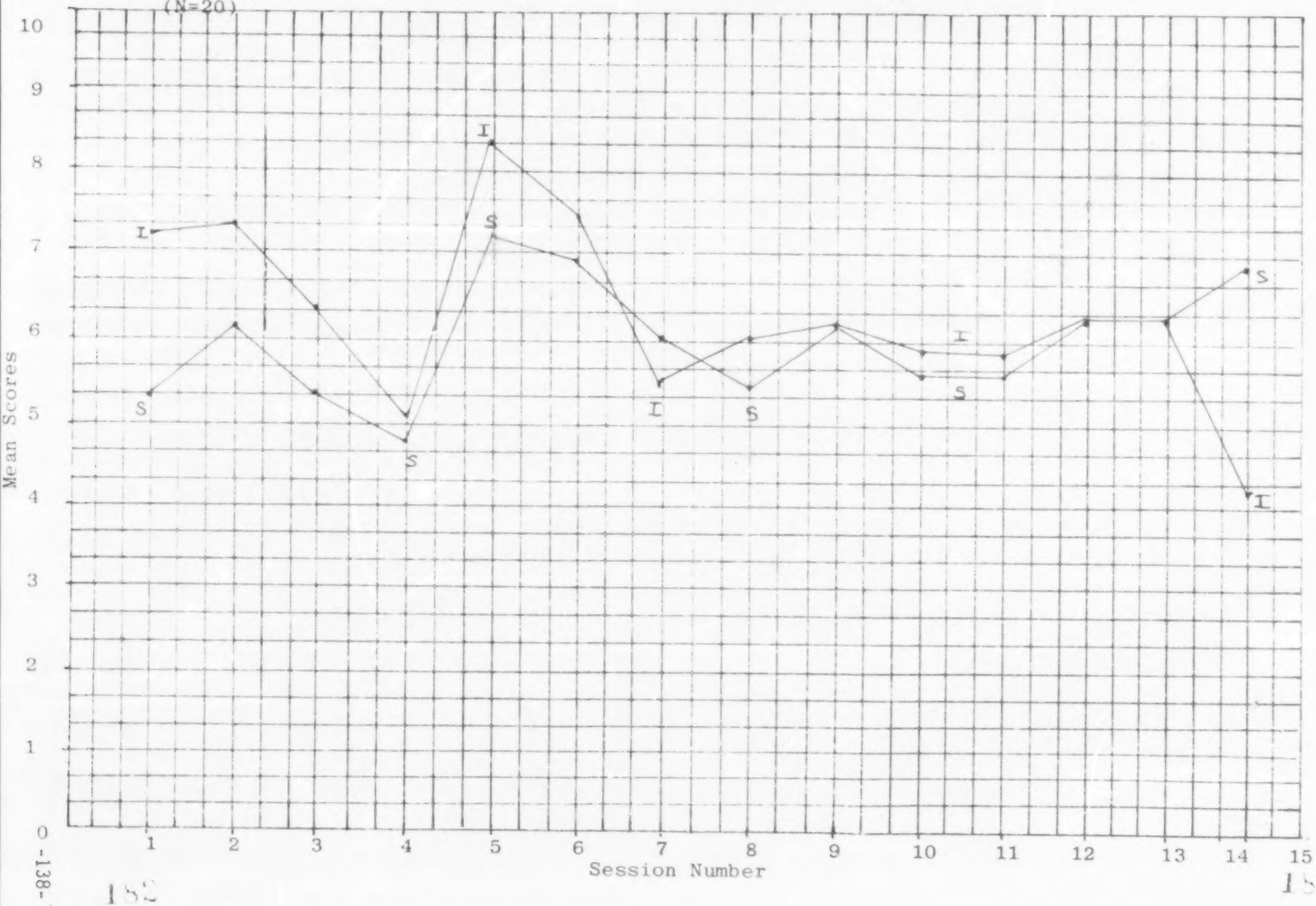


Figure 30.
Mean Scores
Student Reactions
INVOLVEMENT AND SATISFACTION PER SESSION

Stoughton Schools
Mismatched Group
(N=20)

Key
I: Involvement
S: Satisfaction



F. Conclusions

These findings present a rather vivid picture of the way in which the career education program was implemented in this study. They tell us how students experienced the treatment, how teachers reacted to the program guides, and the extent to which both treatments were actually carried out in the four locations. What conclusions can be drawn regarding the questions?

Student Involvement and Satisfaction

Should an inservice career education program be more involving than satisfying, or just the opposite. Ideally, it should probably be both. Our findings indicate that students had very specific statements to make regarding their reactions:

1. In general, the program was both involving and satisfying.

2. While satisfaction remained rather steady, involvement varied from session to session, depending on the type of experience offered.

3. The high-structured sessions surprisingly offered students a type of involvement which they found more satisfying.

4. However, when students were matched to appropriate treatments they increased their involvement and satisfaction, and were less varied in their reactions.

5. Location did not appear to be a factor in student reactions.

From the students perspective the inservice career education program was experienced just about as we had hoped it would be. The concept of matching students to treatments appears important, and that students respond to treatments which are consistent with their learning styles. Even if the matching did not produce better results in terms of cognitive outcomes, the programmatic experiences are both involving and satisfying.

Teacher Reactions

Though teachers were generally pleased with the program, guide, and materials, they felt more comfortable when they were in control. Sharing the control and decision-making with students remains a problem for teachers in this study. They reacted more positively to high-structured sessions where they could regulate the activity according to their own comfort level and the program guide. The less structured sessions allowed students to participate in deciding activities, to interact with one another, and to shape the specific content of the lesson. While ideally more attractive, these actions produced uncertainties which teachers find less satisfying.

The conclusions are inferred from findings on the overall results, high- and low-structured treatments, location, and matching/mismatching studies. It is interesting to note that even location of the four

different instructions had little effect on the program. Teachers' reactions relate more directly to the kind of treatment they are expected to carry out than any other single factor. These findings suggest a need for better understanding of the relationship between the psychological process of teachers and their previous teaching experiences, and the properties of the instructional program which they are expected to implement.

Implementation of the Program

While teachers reactions appear to be directly related to the kind of program which they are expected to implement, we might ask, "To what extent does this relationship influence the implementation of the program?" Apparently, very little would be the answer from these findings. The mean score for overall implementation is fairly impressive. Teachers were able to carry out the instructional tasks within the time allotted for each. These figures remain consistent for both the high- and low-instructional treatments. Though teachers tended to prefer a high-structured treatment, they still were able to implement the low.

A more significant finding was that all teachers implemented the program more completely at the beginning than during the final sessions. This finding tells us something about the need for continuous motivation - from some external source, it appears. Implementation not only involves whether a teacher can implement the program, but whether teachers and students have the stamina and drive to carry it out in a comprehensive manner. These factors were not examined in this study, and that limits our speculation; however, program implementation appears more related to variables of this type than the actual properties of the instructional activities. Teachers will implement different instructional treatments when the specifications are there for them to follow, and they will do so more completely when there is continuous motivation to do so.

In general, the implementation of the program occurred as we hoped it would. The concept of matching appears to be valid - students will respond better to matched treatments and learning styles. Lowering the extent of imposed structure remains a challenge to most teachers, nevertheless, they can and will do it when requested, and when specifications are provided for the instructional activity. The location of the treatment-student interaction is less important than researchers suggest. Yet, there were some variations from setting to setting. The instructor is more likely to be a factor in implementing different treatments than are students, or factors from the setting.

Examination of the details of this research points to the importance of the teacher in rendering a faithful implementation of the program. While theory and research may provide the rational basis for motivation, the teacher remains pivotal to the actual operations of the program. We did not collect evidence on the personalities of teachers and, in general, the variances in the extent to which teachers implemented the program were not significant, however, teachers appear to leave their marks on instruction. Whether instruction is carried out faithfully and completely is more related to teachers than students.

In conclusion, the program was indeed implemented according to treatment specifications. Whatever student achievement resulted from the inservice career education program and which are a product of it, we can have confidence that the program was implemented. Finally, the program is practical - it can be carried out in different settings with different students and teachers. If staff developers want a well designed inservice career education program this one is practical and they can implement it with their teachers.

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APPENDIX A

THE AFFECTIVE INSTRUMENT

QUESTIONNAIRE

The following questionnaire asks you to answer questions about your personal background, teaching experiences and attitudes. This information is important to know so that we may explain your success in the graduate course on career awareness in the elementary school. Please take time to read each question carefully and fill out all information requested.

Thank you for your cooperation.

I. 1. I am an elementary school teacher in the following school system.

_____ 1. Boston
_____ 2. Brookline
_____ 3. Barnstable
_____ 4. Stoughton
_____ 5. Other

2. My age is

_____ 1. 20 - 29 yrs.
_____ 2. 30 - 39 yrs.
_____ 3. 40 - 49 yrs.
_____ 4. 50 - 59 yrs.
_____ 5. 60 and above

3. I am a

_____ 1. Female
_____ 2. Male

4. My marital status is

_____ 1. Single
_____ 2. Married
_____ 3. Separated/Divorced
_____ 4. Widowed

5. My family income is

_____ 1. Below $10,000
_____ 2. $10,000 - $15,000
_____ 3. $16,000 - $20,000
_____ 4. $20,000 - $25,000
_____ 5. Above $25,000

6. I have been a member of the education profession for

_____ 1. less than three years.
_____ 2. three to five years.
_____ 3. six to ten years.
_____ 4. eleven to fifteen years.
_____ 5. more than fifteen years.

7. My highest level of educational attainment is

_____ 1. Bachelors degree in education.
_____ 2. Bachelors degree in a field other than education.
_____ 3. Masters Degree
_____ 4. Masters +30 or Certificate of Advanced Study.
_____ 5. Doctorate.

8. I received my highest degree

_____ 1. less than three years ago.
_____ 2. three to five years ago.
_____ 3. six to ten years ago.
_____ 4. eleven to fifteen years ago.
_____ 5. more than fifteen years ago.

9. I most recently obtained additional credit hours

_____ 1. less than three years ago.
_____ 2. three to five years ago.
_____ 3. six to ten years ago.
_____ 4. eleven to fifteen years ago.
_____ 5. more than fifteen years ago.

10. How many professional organizations do you belong to (IF NONE, PLEASE LEAVE BLANK)

_____ 1. one
_____ 2. two
_____ 3. three
_____ 4. four
_____ 5. five or more

11. Please describe your general level of organizational activity in these organizations (IF NO ORGANIZATIONS, PLEASE LEAVE THIS QUESTION BLANK)

_____ 1. Much Involvement
_____ 2. Some Involvement
_____ 3. Little Involvement
_____ 4. No Involvement

12. How many hours per week do you regularly read educational journals, newsletters related to your teaching?

_____ 1. less than one hour per week.
_____ 2. one to three hours per week.
_____ 3. three to five hours per week.
_____ 4. more than five hours per week.

13. I teach the following subject areas (IF NONE OF THESE APPLY, LEAVE BLANK)

_____ 1. All elementary subjects.
_____ 2. Math and Science only.
_____ 3. Language Arts and Social Studies only.
_____ 4. Art/Music.
_____ 5. Reading only.

The following is a list of curriculum approaches. Please indicate whether these approaches are present in your elementary school.

	INNOVATION		
14.	Team teaching	1. Yes	2. No
15.	Teacher aides	1. Yes	2. No
16.	Value Clarification	1. Yes	2. No
17.	Sex education and family living	1. Yes	2. No
18.	Resource Rooms	1. Yes	2. No
19.	Learning Centers or Stations	1. Yes	2. No
20.	Multimedia Centers	1. Yes	2. No
21.	Multimedia Curriculum Packets	1. Yes	2. No
22.	Drug Abuse Education	1. Yes	2. No
23.	Individualized Instruction	1. Yes	2. No
24.	Micro Teaching	1. Yes	2. No
25.	Interaction Analysis	1. Yes	2. No
26.	Computer-Assisted Instruction	1. Yes	2. No
27.	Middle School	1. Yes	2. No
28.	Differentiated Staffing	1. Yes	2. No
29.	Bilingual Education	1. Yes	2. No
30.	Adaptive Physical Education	1. Yes	2. No

31.	Community School (all ages)	1.	Yes	2.	No
32.	Out-door Education Program	1.	Yes	2.	No
33.	Non-graded Classes	1.	Yes	2.	No
34.	Performance Contracting	1.	Yes	2.	No
35.	Game Simulation	1.	Yes	2.	No
36.	Career Education Materials	1.	Yes	2.	No
37.	Multi-age Grouping for tutoring learning experiences	1.	Yes	2.	No
38.	Inquiry Learning	1.	Yes	2.	No
39.	Environmental Education and Ecology	1.	Yes	2.	No
40.	Alcohol Education	1.	Yes	2.	No

II. The following statements describe classroom situations. Please indicate the appropriate response number which best describes your classroom.

Response Categories:

1. Never
2. Seldom
3. Occasionally
4. Frequently
5. Always

_____ 41. Students can talk to each other while they work.

_____ 42. Students cannot move about the room without asking my permission.

_____ 43. All students work at the same lesson going on in front of the room.

_____ 44. I give my students several assignments and they choose the one they want to work on.

_____ 45. I plan how my students will spend a day at school.

_____ 46. Several small groups of students work at different tasks in several parts of the room.

_____ 47. I postpone planned activities in order to do something more pertinent.

_____ 48. I plan teaching activities with my colleagues.

_____ 49. I call parents on the telephone to report the progress of their child.

_____ 50. I lecture to my students.

_____ 51. I share teaching information and materials with my colleagues.

_____ 52. If a student finishes before others are done, he/she can start a new lesson without waiting for the others to complete the assignments.

_____ 53. Every student gets a copy of the same book to work from.

_____ 54. I inquire into new teaching methods and materials.

_____ 55. I adhere to my lesson plans.

_____ 56. I invite parents to visit the classroom at their leisure.

_____ 57. Textbooks are my primary teaching material.

_____ 58. I use inductive or inquiry teaching methods.

_____ 59. Students may ask other students for help.

_____ 60. I use many different types of materials besides the textbook.

_____ 61. In my classroom, I arrange the desks in rows.

EVALUATION PREFERENCES

The following statements refer to various ways you may prefer to have your teaching performance or graduate course work evaluated. Choose one of the two alternative responses. Please do not leave any items blank.

A. Teaching Performance

62. (1) I would like to be evaluated only by my teaching colleagues.

(2) I would like to be evaluated only by the school administration.

63. (1) I would like the evaluator to tell me what's right or wrong about my teaching.

(2) I would like the evaluator to discuss with me the ways I am performing and doing things in the classroom.

64. (1) I would like to receive a grade from my evaluator.

(2) I would like to grade myself on my teaching performance.

65. (1) I evaluate my teaching by the criteria I establish and I feel are important.

(2) I evaluate my teaching by the criteria the administration establishes.

66. (1) Teaching evaluations should be objective and absolute.

(2) Teaching evaluations should be subjective and relative.

67. (1) I would prefer to receive a report of my teaching evaluation in the form of a personal letter or conference.

(2) I would prefer to receive a report of my teaching evaluation in the form of a report card or objective, standardized form letter.

68. (1) When I am evaluated, I would like the evaluator to tell me what he/she thinks <u>immediately</u>.

(2) When I am evaluated, I would not care when the evaluator issues his/her report.

69. (1) I evaluate my teaching by what other teachers and students say about me.

(2) I evaluate my teaching by what the administration says about me.

70. (1) I would prefer to be evaluated a few times a term so I know where I stand.

(2) I would prefer to be evaluated only once a term.

B. Course Evaluation

71. (1) The grade I receive in this course is very important to me.

(2) I am not concerned about the grade I receive in this course.

72. (1) If a written exam were given, I would prefer it to be multiple choice.

(2) If a written exam were given, I would prefer it to be essay type.

73. (1) I would like this course to have many short quizzes so I'll know where I stand.

(2) I prefer to have a final exam only.

74. (1) I would like to work on a group project and be evaluated as a group.

(2) I would prefer to work alone and be evaluated on my own work.

75. (1) I would like the projects in this course to be evaluated by my fellow students.

(2) I would like the projects in this course to be evaluated by my instructors.

76. (1) I would like to receive immediate feedback on the project I do for this course.

(2) I can wait until the end of the term to receive my grades on the projects.

77. If I received a C in this course:

(1) I would be very upset and angry and feel that I have been "cheated".

(2) I would be concerned, and make inquires.

78. (1) I would like to write my own exams and answer them.

(2) I would like to take exams written only by the instructors of the course.

79. (1) I would like the instructors of this course to use a norm based system of grading (a grading system based on the bell shaped curve).

(2) I would like the instructors of this course to use criterion referenced system of grading (a grading system based on mastery of objectives).

80. (1) I would like the instructors of the course to tell me what's right or wrong about my course performance.

(2) I would like the intructors of this course to discuss with me how I am performing in the course.

III.

DIRECTIONS: READ EACH STATEMENT CAREFULLY AND DECIDE HOW YOU FEEL ABOUT IT. YOU ARE OFFERED FIVE POSSIBLE ANSWERS TO EACH STATEMENT. PLEASE READ EACH STATEMENT AND RESPOND.

1. SA if you strongly agree with the statement.
2. A if on the whole you would tend to agree.
3. N if you neither agree nor disagree.
4. D if on the whole you would tend to disagree.
5. SD if you strongly disagree with the statement.

		SA	A	N	D	SD
81.	Education should have positive implications for career development.	1	2	3	4	5
82.	The focus of the academic disciplines should be related to the career plans of each student.	1	2	3	4	5
83.	School curricula should be oriented to relate to career development.	1	2	3	4	5
84.	The community is an excellent resource to use in a career education program.	1	2	3	4	5
85.	Education about careers should be integrated into the regular curriculum.	1	2	3	4	5
86.	Occupational role playing can be an effective way for students to learn about careers.	1	2	3	4	5
87.	The world of work should be an organizing center for the curriculum.	1	2	3	4	5
88.	Education should deal with people centered activities.	1	2	3	4	5
89.	Consideration should be given to the views of students in planning and evaluating career education programs	1	2	3	4	5
90.	The schools have the responsibility to help students develop career objectives.	1	2	3	4	5
91.	Students should be knowledgeable about the world of work before leaving school.	1	2	3	4	5
92.	The school curriculum should be related to the career goals of the students.	1	2	3	4	5
93.	The interests of parents should be considered in developing the school curriculum.	1	2	3	4	5

1. SA if you strongly agree with the statement.
2. A if on the whole you would tend to agree.
3. N if you neither agree nor disagree.
4. D if on the whole you would tend to disagree.
5. SD if you strongly disagree with the statement.

		SA	A	N	D	SD
94.	Students presently have sufficient orientation to the possibilities in the world of work to make sound career decisions.	1	2	3	4	5
95.	A career education program should involve real life experiences.	1	2	3	4	5
96.	"Hands on" experiences are essential to a good career education program.	1	2	3	4	5
97.	Teachers are well prepared to teach in career education programs.	1	2	3	4	5
98.	College and university teacher educators do an excellent job in preparing teachers to teach in career education programs.	1	2	3	4	5
99.	For students to make realistic occupational decisions, they should have an opportunity to compare their abilities, interests and needs with the requirements of various types of occupations.	1	2	3	4	5
100.	Students should be aware of the economic system and its implications for employment.	1	2	3	4	5
101.	A major purpose of career education is to help young people discover their individual interests and abilities.	1	2	3	4	5
102.	Commercially developed career oriented games may be considered as resource materials in career education.	1	2	3	4	5
103.	Career education should be concerned with helping each student develop a positive self-image.	1	2	3	4	5
104.	Experiences in career education should allow students to evaluate their interests and abilities.	1	2	3	4	5
105.	Educational systems should be concerned with the placement of some terminating students into entry-level jobs.	1	2	3	4	5
106.	Career education should help students develop positive attitudes toward work.	1	2	3	4	5
107.	It is important to involve parents in planning career education programs.	1	2	3	4	5

1. SA if you strongly agree with the statement.
2. A if on the whole you would tend to agree.
3. N if you neither agree nor disagree.
4. D if on the whole you would tend to disagree.
5. SD if you strongly disagree with the statement.

		SA	A	N	D	SD
108.	Follow-up studies of former students should be an important part of any career education program.	1	2	3	4	5
109.	A career education program should enhance the social skills of the students.	1	2	3	4	5
110.	In this complicated world of ours the only way we can know what's going on is to rely on leaders or experts who can be trusted.	1	2	3	4	5
111.	My blood boils whenever a person stubbornly refuses to admit he's wrong.	1	2	3	4	5
112.	There are two kind of people in this world; those who are for the truth and those who are against the truth.	1	2	3	4	5
113.	Most people just don't know what's good for them.	1	2	3	4	5
114.	Of all the different philosophies which exist in this world there is probably only one which is correct.	1	2	3	4	5
115.	The highest form of government is a democracy and the highest form of democracy is a government run by those who are most intelligent.	1	2	3	4	5
116.	The main thing in life is for a person to want to do something important.	1	2	3	4	5
117.	I'd like it if I could find someone who would tell me how to solve my personal problems.	1	2	3	4	5
118.	Most of the ideas which get printed nowadays aren't worth the paper they are printed on.	1	2	3	4	5
119.	Man on his own is a helpless and miserable creature.	1	2	3	4	5

1. SA if you strongly agree with the statement.
2. A if on the whole you would tend to agree.
3. N if you neither agree now disagree.
4. D if on the whole you would tend to disagree.
5. SD if you strongly disagree with the statement.

		SA	A	N	D	SD
120.	It is only when a person devotes himself to an ideal or cause that life becomes meaningful.	1	2	3	4	5
IV. 121.	Most people just don't give a "damn" for others.	1	2	3	4	5
122.	To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.	1	2	3	4	5
123.	It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects.	1	2	3	4	5
124.	The present is all too often full of unhappiness. It is only the future that counts.	1	2	3	4	5
125.	The United States and Russia have just about nothing in common.	1	2	3	4	5
126.	In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.	1	2	3	4	5
127.	While I don't like to admit this even to myself, my secret ambition is to become a great person, like Einstein, or Beethoven, or Margaret Mead.	1	2	3	4	5
128.	Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups.	1	2	3	4	5
129.	It is better to be a dead hero than to be a live coward.	1	2	3	4	5

Please respond either true or false to each of the following statements. Please leave no statement unanswered.

130. It is hard for me to start a conversation with strangers. 1. True 2. False

131. I must admit that I would find it hard to have for a close friend a person whose manners or appearance made him somewhat repulsive, no matter how brilliant or kind he might be. 1. True 2. False

132. I find that a well-ordered mode of life with regular hours is congenial to my temperment. 1. True 2. False

133. I must admit that it makes me angry when other people interfere with my daily activity. 1. True 2. False

134. I get disgusted with myself when I can't understand some problem in my field, or when I can't seem to make any progress on a research problem. 1. True 2. False

135. I get very tense and anxious when I think other people are disapproving of me. 1. True 2. False

136. I like to talk before groups of people. 1. True 2. False

137. I would certainly enjoy beating a crook at his own game. 1. True 2. False

138. A strong person doesn't show his emotions and feelings. 1. True 2. False

139. When I work on a committee I like to take charge of things. 1. True 2. False

140. It bothers me when something unexpected interrupts my daily routine. 1. True 2. False

141. It is hard for me to act natural when I am with new people. 1. True 2. False

142. It wouldn't make me nervous if any members of my family got into trouble with the law. 1. True 2. False

143. I try to remember good stories to pass them on to other people. 1. True 2. False

144. I usually don't like to talk much unless I am with people I know very well. 1. True 2. False

145. I must admit I try to see what others think before I take a stand. 1. True 2. False

146.	I am embarrassed with people I do not know well.	1. True 2. False
147.	I would be uncomfortable in anything other than fairly conventional dress.	1. True 2. False
148.	I am certainly lacking in self-confidence.	1. True 2. False
149.	I find it hard to set aside a task that I have undertaken even for a short time.	1. True 2. False
150.	I feel nervous if I have to meet a lot of people.	1. True 2. False
151.	Criticism or scolding makes me very uncomfortable.	1. True 2. False
152.	I always follow the rule: business before pleasure.	1. True 2. False
153.	I don't like to undertake any project unless I have a pretty good idea as to how it will turn cut.	1. True 2. False
154.	Most people inwardly dislike putting themselves out to help other people.	1. True 2. False
155.	I usually feel nervous and ill at ease at a formal dance or party.	1. True 2. False
156.	At times I feel that I can make up my mind with unusually great ease.	1. True 2. False
157.	I would like to be an actor on the stage or in the movies.	1. True 2. False
158.	I am very slow in making up my mind.	1. True 2. False
159.	I don't like things to be uncertain and unpredictable.	1. True 2. False
160.	I am a better talker than listener.	1. True 2. False

APPENDIX B

Scoring of Instruments

A. Dogmatism Scale

In scoring the dogmatism scale, all strongly agree statements were scored as five points; agree, four points; neutral, three points; disagree, two points; strongly disagree, one point. The maximum score of the 20-item instrument is 100.

1. SA if you strongly agree with the statement.
2. A if on the whole you would tend to agree.
3. N if you neither agree nor disagree.
4. D if on the whole you would tend to disagree.
5. SD if you strongly disagree with the statement.

		SA	A	N	D	SD
108.	Follow-up studies of former students should be an important part of any career education program.	1	2	3	4	5
109.	A career education program should enhance the social skills of the students.	1	2	3	4	5
110.	In this complicated world of ours the only way we can know what's going on is to rely on leaders or experts who can be trusted.	1	2	3	4	5
111.	My blood boils whenever a person stubbornly refuses to admit he's wrong.	1	2	3	4	5
112.	There are two kind of people in this world; those who are for the truth and those who are against the truth.	1	2	3	4	5
113.	Most people just don't know what's good for them.	1	2	3	4	5
114.	Of all the different philosophies which exist in this world there is probably only one which is correct.	1	2	3	4	5
115.	The highest form of government is a democracy and the highest form of democracy is a government run by those who are most intelligent.	1	2	3	4	5
116.	The main thing in life is for a person to want to do something important.	1	2	3	4	5
117.	I'd like it if I could find someone who would tell me how to solve my personal problems.	1	2	3	4	5
118.	Most of the ideas which get printed nowadays aren't worth the paper they are printed on.	1	2	3	4	5
119.	Man on his own is a helpless and miserable creature.	1	2	3	4	5

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		SA	A	N	D	SD
	120. It is only when a person devotes himself to an ideal or cause that life becomes meaningful.	1	2	3	4	5
IV.	121. Most people just don't give a "damn" for others.	1	2	3	4	5
	122. To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.	1	2	3	4	5
	123. It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects.	1	2	3	4	5
	124. The present is all too often full of unhappiness. It is only the future that counts.	1	2	3	4	5
	125. The United States and Russia have just about nothing in common.	1	2	3	4	5
	126. In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.	1	2	3	4	5
	127. While I don't like to admit this even to myself, my secret ambition is to become a great person, like Einstein, or Beethoven, or Margaret Mead.	1	2	3	4	5
	128. Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups.	1	2	3	4	5
	129. It is better to be a dead hero than to be a live coward.	1	2	3	4	5

B. Social Registry Scale

In the social registry scale the respondents received one point if they answered true to an item, and zero if they answerd false. However, the starred items are reversely coded. The maximum score is 31.

Please respond either true or false to each of the following statements. Please leave no statement unanswered.

130. It is hard for me to start a conversation with strangers. 1. True 2. False

131. I must admit that I would find it hard to have for a close friend a person whose manners or appearance made him somewhat repulsive, no matter how brilliant or kind he might be. 1. True 2. False

132. I find that a well-ordered mode of life with regular hours is congenial to my temperment. 1. True 2. False

133. I must admit that it makes me angry when other people interfere with my daily activity. 1. True 2. False

134. I get disgusted with myself when I can't understand some problem in my field, or when I can't seem to make any progress on a research problem. 1. True 2. False

135. I get very tense and anxious when I think other people are disapproving of me. 1. True 2. False

136. I like to talk before groups of people. 1. True 2. False

137. I would certainly enjoy beating a crook at his own game. 1. True 2. False

138. A strong person doesn't show his emotions and feelings. 1. True 2. False

139. When I work on a committee I like to take charge of things. 1. True 2. False

140. It bothers me when something unexpected interrupts my daily routine. 1. True 2. False

141. It is hard for me to act natural when I am with new people. 1. True 2. False

142. It wouldn't make me nervous if any members of my family got into trouble with the law. 1. True 2. False

143. I try to remember good stories to pass them on to other people. 1. True 2. False

144. I usually don't like to talk much unless I am with people I know very well. 1. True 2. False

145. I must admit I try to see what others think before I take a stand. 1. True 2. False

146.	I am embarrassed with people I do not know well.	1. True 2. False
147.	I would be uncomfortable in anything other than fairly conventional dress.	1. True 2. False
148.	I am certainly lacking in self-confidence.	1. True 2. False
149.	I find it hard to set aside a task that I have undertaken even for a short time.	1. True 2. False
150.	I feel nervous if I have to meet a lot of people.	1. True 2. False
151.	Criticism or scolding makes me very uncomfcrtable.	1. True 2. False
152.	I always follow the rule: business before pleasure.	1. True 2. False
153.	I don't like to undertake any project unless I have a pretty good idea as to how it will turn cut.	1. True 2. False
154.	Most people inwardly dislike putting themselves out to help other people.	1. True 2. False
155.	I usually feel nervous and ill at ease at a formal dance or party.	1. True 2. False
156.	At times I feel that I can make up my mind with unusually great ease.	1. True 2. False
157.	I would like to be an actor on the stage or in the movies.	1. True 2. False
158.	I am very slow in making up my mind.	1. True 2. False
159.	I don't like things to be uncertain and unpredictable.	1. True 2. False
160.	I am a better talker than listener.	1. True 2. False

_____ 47. I postpone planned activities in order to do something more pertinent.

_____ 48. I plan teaching activities with my colleagues.

_____ 49. I call parents on the telephone to report the progress of their child.

_____ 50. I lecture to my students.

_____ 51. I share teaching information and materials with my colleagues.

_____ 52. If a student finishes before others are done, he/she can start a new lesson without waiting for the others to complete the assignments.

_____ 53. Every student gets a copy of the same book to work from.

_____ 54. I inquire into new teaching methods and materials.

_____ 55. I adhere to my lesson plans.

_____ 56. I invite parents to visit the classroom at their leisure.

_____ 57. Textbooks are my primary teaching material.

_____ 58. I use inductive or inquiry teaching methods.

_____ 59. Students may ask other students for help.

_____ 60. I use many different types of materials besides the textbook.

_____ 61. In my classroom, I arrange the desks in rows.

EVALUATION PREFERENCES

The following statements refer to various ways you may prefer to have your teaching performance or graduate course work evaluated. Choose one of the two alternative responses. Please do not leave any items blank.

A. Teaching Performance

62. (1) I would like to be evaluated only by my teaching colleagues.

(2) I would like to be evaluated only by the school administration.

63. (1) I would like the evaluator to tell me what's right or wrong about my teaching.

(2) I would like the evaluator to discuss with me the ways I am performing and doing things in the classroom.

64. (1) I would like to receive a grade from my evaluator.

(2) I would like to grade myself on my teaching performance.

65. (1) I evaluate my teaching by the criteria I establish and I feel are important.

(2) I evaluate my teaching by the criteria the administration establishes.

66. (1) Teaching evaluations should be objective and absolute.

(2) Teaching evaluations should be subjective and relative.

67. (1) I would prefer to receive a report of my teaching evaluation in the form of a personal letter or conference.

(2) I would prefer to receive a report of my teaching evaluation in the form of a report card or objective, standardized form letter.

68. (1) When I am evaluated, I would like the evaluator to tell me what he/she thinks immediately.

(2) When I am evaluated, I would not care when the evaluator issues his/her report.

69. (1) I evaluate my teaching by what other teachers and students say about me.

(2) I evaluate my teaching by what the administration says about me.

70. (1) I would prefer to be evaluated a few times a term so I know where I stand.

(2) I would prefer to be evaluated only once a term.

B. Course Evaluation

71. (1) The grade I receive in this course is very important to me.

(2) I am not concerned about the grade I receive in this course.

72. (1) If a written exam were given, I would prefer it to be multiple choice.

(2) If a written exam were given, I would prefer it to be essay type.

73. (1) I would like this course to have many short quizzes so I'll know where I stand.

(2) I prefer to have a final exam only.

74. (1) I would like to work on a group project and be evaluated as a group.

(2) I would prefer to work alone and be evaluated on my own work.

75. (1) I would like the projects in this course to be evaluated by my fellow students.

(2) I would like the projects in this course to be evaluated by my instructors.

76. (1) I would like to receive immediate feedback on the project I do for this course.

(2) I can wait until the end of the term to receive my grades on the projects.

77. If I received a C in this course:

(1) I would be very upset and angry and feel that I have been "cheated".

(2) I would be concerned, and make inquires.

78. (1) I would like to write my own exams and answer them.

(2) I would like to take exams written only by the instructors of the course.

79. (1) I would like the instructors of this course to use a norm based system of grading (a grading system based on the bell shaped curve).

(2) I would like the instructors of this course to use criterion referenced system of grading (a grading system based on mastery of objectives).

80. (1) I would like the instructors of the course to tell me what's right or wrong about my course performance.

(2) I would like the intructors of this course to discuss with me how I am performing in the course.

C. Innovation Scale

The innovation scale was scored by awarding one point if the respondent checked yes, the innovation was present in his school, and zero if he checked no. The maximum score was 27.

12. How many hours per week do you regularly read educational journals, newsletters related to your teaching?

_____ 1. less than one hour per week.
_____ 2. one to three hours per week.
_____ 3. three to five hours per week.
_____ 4. more than five hours per week.

13. I teach the following subject areas (IF NONE OF THESE APPLY, LEAVE BLANK)

_____ 1. All elementary subjects.
_____ 2. Math and Science only.
_____ 3. Language Arts and Social Studies only.
_____ 4. Art/Music.
_____ 5. Reading only.

The following is a list of curriculum approaches. Please indicate whether these approaches are present in your elementary school.

	INNOVATION		
14.	Team teaching	1. Yes	2. No
15.	Teacher aides	1. Yes	2. No
16.	Value Clarification	1. Yes	2. No
17.	Sex education and family living	1. Yes	2. No
18.	Resource Rooms	1. Yes	2. No
19.	Learning Centers or Stations	1. Yes	2. No
20.	Multimedia Centers	1. Yes	2. No
21.	Multimedia Curriculum Packets	1. Yes	2. No
22.	Drug Abuse Education	1. Yes	2. No
23.	Individualized Instruction	1. Yes	2. No
24.	Micro Teaching	1. Yes	2. No
25.	Interaction Analysis	1. Yes	2. No
26.	Computer-Assisted Instruction	1. Yes	2. No
27.	Middle School	1. Yes	2. No
28.	Differentiated Staffing	1. Yes	2. No
29.	Bilingual Education	1. Yes	2. No
30.	Adaptive Physical Education	1. Yes	2. No

31.	Community School (all ages)	1.	Yes	2.	No
32.	Out-door Education Program	1.	Yes	2.	No
33.	Non-graded Classes	1.	Yes	2.	No
34.	Performance Contracting	1.	Yes	2.	No
35.	Game Simulation	1.	Yes	2.	No
36.	Career Education Materials	1.	Yes	2.	No
37.	Multi-age Grouping for tutoring learning experiences	1.	Yes	2.	No
38.	Inquiry Learning	1.	Yes	2.	No
39.	Environmental Education and Ecology	1.	Yes	2.	No
40.	Alcohol Education	1.	Yes	2.	No

II. The following statements describe classroom situations. Please indicate the appropriate response number which best describes your classroom.

Response Categories:

1. Never
2. Seldom
3. Occasionally
4. Frequently
5. Always

_____ 41. Students can talk to each other while they work.

_____ 42. Students cannot move about the room without asking my permission.

_____ 43. All students work at the same lesson going on in front of the room.

_____ 44. I give my students several assignments and they choose the one they want to work on.

_____ 45. I plan how my students will spend a day at school.

_____ 46. Several small groups of students work at different tasks in several parts of the room.

D. Teaching Structure Scale

If the respondent answered "always," he received five points (indicating a low-structured, flexible classroom); frequently, four points; occasionally, three points; seldom, two points; and never, one point. The starred items on the scale have reverse scoring. The maximum number of points in the scale is 105.

31.	Community School (all ages)	1. Yes	2. No
32.	Out-door Education Program	1. Yes	2. No
33.	Non-graded Classes	1. Yes	2. No
34.	Performance Contracting	1. Yes	2. No
35.	Game Simulation	1. Yes	2. No
36.	Career Education Materials	1. Yes	2. No
37.	Multi-age Grouping for tutoring learning experiences	1. Yes	2. No
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_____ 51. I share teaching information and materials with my colleagues.

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EVALUATION PREFERENCES

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A. Teaching Performance

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(2) I would like to be evaluated only by the school administration.

APPENDIX C

220 DO NOT FILM THIS PAGE

THE COGNITIVE PRE/POST-TEST

Code Identification Number: _____

Location (Circle): Barnstable Boston Brookline Stoughton

Section Time (Circle): 4:00 to 6:00 P.M. 7:00 to 9:00 P.M.

Directions

Read each of the questions contained in this test and mark the answer which is most appropriate.

Mark your answers in the spaces provided for each question.

1. Which of the following is not an appropriate outcome of an individual career infusion activity?

___ a. reinforcement of the academic subject.
___ b. increased student self-awareness.
___ c. acquisition of a saleable skill.
___ d. occupational awareness.
___ e. development of one of the elements of career education.

2. The best way to teach career education at the elementary school level is:

___ a. infusion into existing curricula.
___ b. a separate block of time each week, taught by the classroom teacher.
___ c. a separate block of time each week, taught by a career education specialist.
___ d. a separate course - like art or gym.
___ e. field trips to local places of employment.

3. Long term funding for career education should come from:

___ a. a budget item in the local school budget.
___ b. a budget item in the state funds for education.
___ c. a budget item in federal funds for education.
___ d. a reallocation of resources in the existing school budget.
___ e. vocational education funds.

4. Career education is an educational movement designed primarily to serve:

___ a. potential dropouts.
___ b. all students.
___ c. students going into vocational programs.
___ d. students going into technical careers.
___ e. students going to college.

5. _____ is a conscious effort, aimed at producing benefits for oneself and/or for oneself and others.

___ a. career education.
___ b. work.
___ c. leisure.
___ d. volunteer activity.
___ e. counseling.

6. _____ is the totality of experiences through which one learns about and prepares to engage in work as part of his/her way of living.

___ a. career education.
___ b. work.
___ c. leisure.
___ d. volunteer activity.
___ e. counseling.

7. Unemployment for _____ is three times the national unemployment rate.

___ a. black Americans.
___ b. females.
___ c. minorities in general.
___ d. high school dropouts.
___ e. youth between 18 and 25.

8. Communicating, problem-solving, planning, and decision-making are examples of:

___ a. coping behaviors.
___ b. counseling strategies.
___ c. transferable skills.
___ d. elements of career education.
___ e. elements of career development.

9. The Dictionary of Occupational Titles (D.O.T.) classifies its job analyses into:

___ a. data, people, things.
___ b. data, things, situations.
___ c. occupational clusters, people, data.
___ d. people, things, level of abstraction.
___ e. level of abstraction, things, occupational cluster.

10. Which of the following is <u>not</u> part of a comprehensive career education program?

___ a. career awareness.
___ b. career exploration.
___ c. career analysis.
___ d. career preparation.
___ e. career development counseling.

11. Which is the least desirable approach for a career awareness program?

___ a. interest centers.
___ b. separate program.
___ c. infusion.
___ d. units of instruction.
___ e. separate course.

12. - 21. Match each of the following activities (12-21) to the career education element it would best achieve. Note: An element may be used more than once.

___ 12. Decision-making through role playing.

___ 13. Values clarification related to work values.

___ 14. Occupational information game.

___ 15. Review of college catalogs to find specific programs.

___ 16. Interviewing people at their place of work.

___ 17. Establishing and running a company in your classroom.

___ 18. Building a section of a house in industrial arts.

___ 19. Studying the career of your favorite musician.

___ 20. Keeping a personal daily log of your activities, likes and dislikes.

___ 21. Learning how to repair automobiles.

a. self awareness.
b. career awareness.
c. appreciations and attitudes.
d. educational awareness.
e. economic awareness.
f. decision-making skills.
g. skill awareness and beginning competence.
h. employability skills.

22. Which of the following is not characteristic of Super's theory of vocational development?

___ a. vocational development is the process of matching people to jobs.
___ b. people differ in abilities, interests, and personalities.
___ c. individuals are qualified for a number of occupations.
___ d. vocational development is comprised of a series of life stages.
___ e. vocational development is the implementation of a self concept.

23. Which of the following is not an occupational cluster?

___ a. manufacturing.
___ b. business and office.
___ c. personal services.
___ d. education.
___ e. construction.

24. In matching the school curriculum to the elements of career education:

___ a. each element should be matched to one subject area.
___ b. all elements should be matched to every subject area.
___ c. some career education should be infused at least once each day.
___ d. the natural flow of curriculum to elements should serve as the guideline.
___ e. a separate career education curriculum should be "overlaid" onto the school program.

25. Which of the following is not a guideline for developing career awareness infusion activities?

___ a. at least two career education elements should be developed in the activity.
___ b. information about at least one job or occupation should be included in each activity.
___ c. the activity should be a natural outgrowth of the unit under study.
___ d. the activity should include the materials needed for its successful implementation.
___ e. the activity should be developed from at least one objective in the ongoing curriculum.

26. Which of the following would not be an appropriate career awareness infusion activity?

___ a. a two-week unit on measurement in the math curriculum.
___ b. occupational crossword puzzles.
___ c. a six-week study of colleges offering specific programs of interest to the students.
___ d. a personal journal of likes and dislikes kept as part of the language arts program.
___ e. reading a book and writing a report about the career of a favorite personal hero.

27. A career awareness infusion activity should include all of the following except:

___ a. a mandatory field trip component.
___ b. a clearly stated objective.
___ c. a representation of at least two elements of career education.
___ d. a clear relationship to the ongoing educational program.
___ e. a student-centered activity.

28. Which of the following is not a phase of the role playing process?

___ a. warm up the group.
___ b. set the stage.
___ c. enact the role play.
___ d. evaluate the experience.
___ e. debrief the participants.

29. Which of the following is not a legitimate reason for conducting a role playing activity for career awareness?

___ a. provide relevant occupational information in a setting that approximates reality.
___ b. provide successful experience for the imaginative but academically poor student.
___ c. provide vicarious learning through audience observation.
___ d. develop social skills through direct participation and observation.
___ e. identify several solutions to a problem-solving situation through re-enactments with different players.

30. Role playing in career awareness:

___ a. is the best way to transmit values about work.
___ b. provides an opportunity to personalize work roles and work situations.
___ c. is a good source of occupational information.
___ d. should be developed for all the career education elements.
___ e. should not be used because of its inefficiency and variability.

31. Which of the following is not true of career awareness activity centers?

___ a. encourage student self-learning.
___ b. may be set up as supplemental to the ongoing curriculum.
___ c. encourage flexible use of time.
___ d. require careful teacher monitoring while in use.
___ e. require careful teacher design and structuring in their development.

32. Which of the following is not a characteristic of a career awareness activity center?

___ a. provides for the use of a wide variety of materials, activities, and concepts.
___ b. increases the visual stimulation and excitement of a classroom.
___ c. increases the flow of students through various activities in the classroom.
___ d. increases the structure of the classroom setting for the students.
___ e. can be established in many different environmental settings.

33. Which of the following is the best organizer for career awareness activity centers?

___ a. curriculum content/skills.
___ b. career education elements.
___ c. career exploration experiences.
___ d. transferable skills.
___ e. all of the above.

34. Which of the following is an inappropriate guideline for developing activity centers?

___ a. all student activities should be carefully controlled and monitored through the instructions.
___ b. all student activities should be derived from one or more educational objectives.
___ c. all student activities should be introduced to the learner prior to independent study with them.
___ d. all student activities should be monitored through a student self evaluation and record-keeping system.
___ e. all student activities should utilize multiple kinds of processes to accommodate differences in individual learning styles.

35. - 41. In questions 35 to 41 match the best community resource from the list, for each of the following career education objectives:

___ 35. Helping to establish career education policy.
___ 36. Identifying sites for field trips.
___ 37. Provide students with initial exploratory experiences.
___ 38. Provide accurate job-specific information to students.

a. parent volunteers.
b. Chamber of Commerce.
c. Urban League.
d. advisory committee.
e. internships.
f. shadowing programs.
g. Information Resource Center.
h. guest speakers.
i. career mini-course.

___ 39. Provide in-depth career exploration for students.

___ 40. Provide fiscal resources to support career education activities.

___ 41. Provide classroom support for career awareness infusion activities.

42. Which of the following is <u>not</u> true of a career awareness instructional unit?

___ a. addresses a broad concept or theme.
___ b. is keyed to one career education element.
___ c. runs usually from 2 - 6 weeks.
___ d. contains a number of activities.
___ e. has a major culminating experience.

43. Every career awareness instructional unit should accomplish goals related to:

___ a. the subject area and career education.
___ b. the subject area and occupational information.
___ c. occupational information and career education.
___ d. personal development and the subject area.
___ e. all of the above.

44. Each lesson or activity within a career awareness unit of instruction should contain:

___ a. clearly defined objective.
___ b. relationship to at least two elements of career education.
___ c. experiential activities.
___ d. an evaluation component.
___ e. all of the above.

45. In reviewing career education materials, which criteria <u>must</u> be included in the review?

___ a. objectives, activities, resources.
___ b. resources, activities, evaluation.
___ c. objectives, activities, packaging.
___ d. packaging, resources, evaluation.
___ e. objectives, activities, evaluation.

46. In linking a career awareness activity to its broader curricular perspective, which of the following possible linkages would <u>not</u> be appropriate?

___ a. subject area.
___ b. career education element.
___ c. ease of administration.
___ d. occupational cluster.
___ e. none of the above.

47. - 50. Match the appropriate level of responsibility to the person for implementing a comprehensive career education program.

___	47.	Superintendent.	a. policy making.
			b. budget control.
___	48.	Principal.	c. planning.
			d. facilitating.
___	49.	Teacher.	e. communicating.
			f. quality assurance.
___	50.	Community/parents.	g. implementing.

ANSWER KEY

1.	c.	26.	c
2.	a	27.	a
3.	d	28.	e
4.	b	29.	a
5.	b	30.	b
6.	a	31.	d
7.	e	32.	d
8.	c	33.	e
9.	a	34.	a
10.	c	35.	d
11.	b	36.	g
12.	f	37.	f
13.	c	38.	h
14.	b	39.	e
15.	d	40.	b
16.	b	41.	a
17.	e	42.	b
18.	g	43.	a
19.	c	44.	e
20.	a	45.	e
21.	h	46.	c
22.	a	47.	a
23.	d	48.	b
24.	d	49.	g
25.	b	50.	d